

# Municipal Journal

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No. 7



MARKET BUILDING, MADISON, WIS.

## MADISON'S MUNICIPAL MARKET

Enclosed Market Room, Market Master's Room, Waiting Rooms—Sheltered Hitching Posts—Hay Scales—  
Regulations for Use—Control by Board of Health—Farmers Solicited to Use Market

THE city of Madison, Wis., has been using, since its formal opening this spring, a market erected at the cost of \$55,000, consisting of an inclosed building and adjoining hitching shelter, together with an extension of the hitching spaces which are not sheltered. The building is 135 feet long and 75 feet deep, the general market room being approximately 100 feet long by 50 feet wide. At one end of the building, occupying the two corners, are waiting rooms for men and women, each provided with retiring rooms and toilets. Underneath the ladies' waiting room is a steam plant by which the building is heated. A store room is located under the men's waiting

room. Large doors are provided at each end of the building sufficiently wide to permit a team to drive through it; also four small doors, two in the front and two in the rear of the building. The entrance at the rear of the building near the left end opens into the office of the market master, just outside of which are platform scales the beam of which is inside the building. The market room proper was not provided with fixed stalls. It is lighted with an abundance of windows and by skylights in the roof.

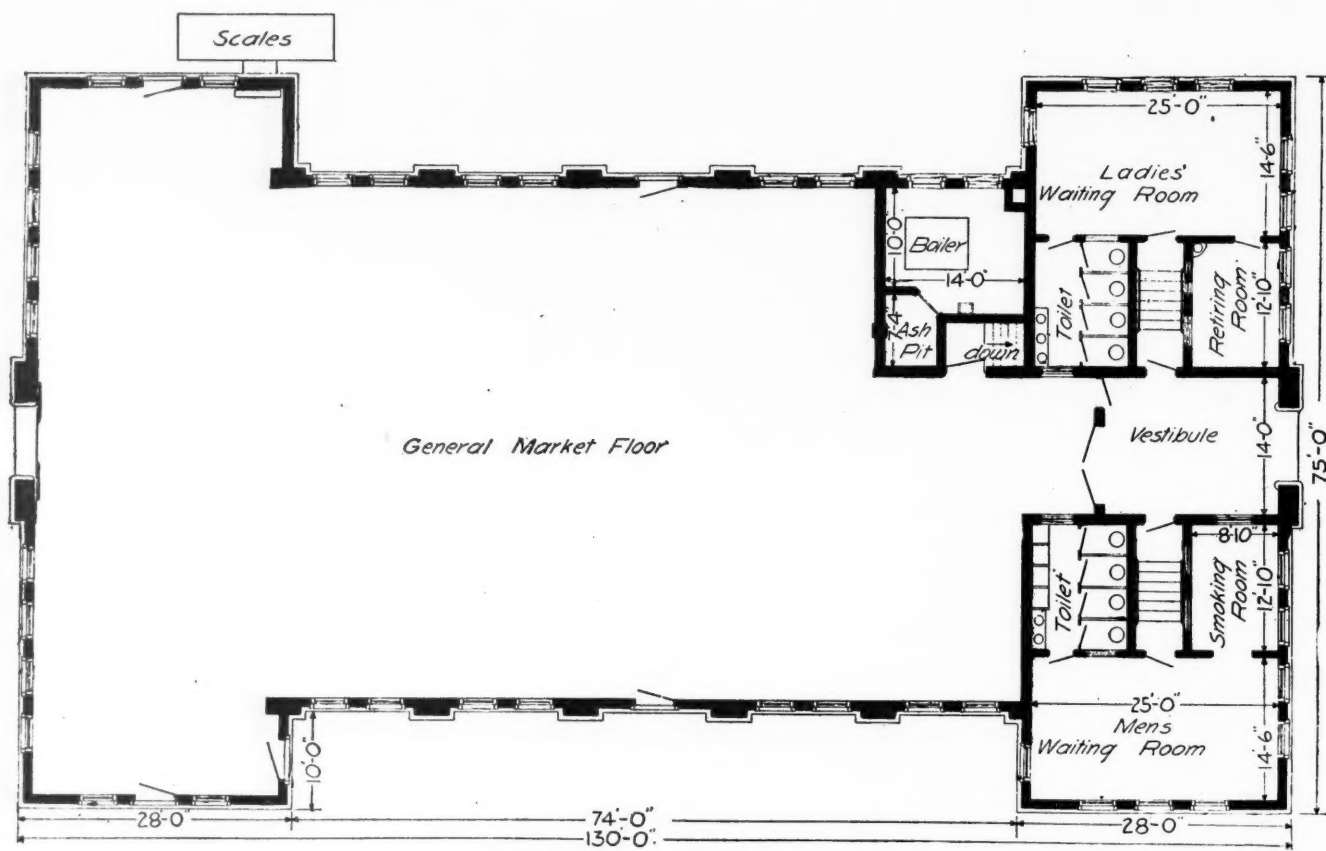
The building is constructed with a concrete foundation and concrete wall carried up to the water table, about 6 feet above

the sidewalk, above which the building is constructed of brick. The roof is carried on steel trusses and is composed of green tiles. It extends with wide eaves, furnishing a shelter over the sidewalk. The floor of the market room is of concrete.

The hitching shelter or shed consists of a roof supported upon six sets or bents of columns, three to a set, under which, down the center line, is a double row of posts carrying a rod to which the teams of farmers and others may be hitched. Each set of three posts is connected at its top with a reinforced concrete girder, and the roof also is of reinforced concrete and

All the concrete work on the hitching shed and the market building was done by city employees. The forms for the concrete in the shed were set up by contractors experienced in this work, but the concrete was placed in them by the city force, which also removed them when the concrete had set. The brick masonry work, carpenter work and other construction work connected with the building and the roofs were performed by contract.

The market is open from 7 a. m. to 6 p. m., daily except Sundays. Spaces or stalls are let by a committee on markets



FLOOR PLAN OF MADISON MARKET BUILDING

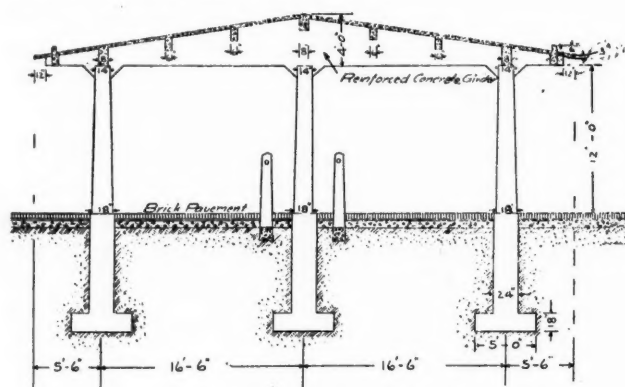
is covered with green tiles similar to those used on the market building. The supporting posts are constructed of concrete, the foundations being carried several feet below the surface. These foundations are 5 feet square by 18 inches thick. The posts which they carry are 24 inches square at the foundation level, reduced to 18 inches square at the ground level and 14 inches at the top. The reinforced concrete girder extends 4 feet 6 inches beyond the centers of the outside posts, and the roof overhangs 12 inches beyond this. This girder is 4 feet deep at the ridge and about 8 inches at the outer ends.

The hitching posts are of concrete carried about 2 feet below the level of the pavement. Through each post near the top is a hole through which is passed a wrought iron pipe which serves for hitching purposes, this pipe being continuous through the entire line of posts and furnished with an iron knob on each end to prevent its removal. This line of posts extends the full length of the shed and approximately the same number are continued in a straight line beyond the end of the shed.

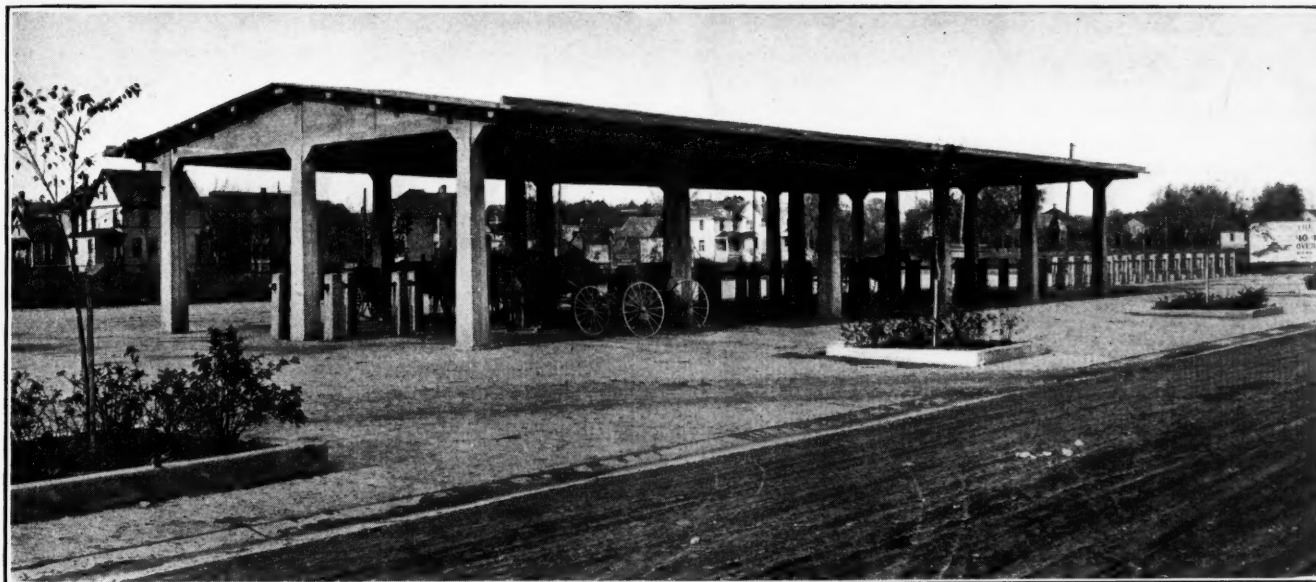
The floor or pavement under the shed and that over the entire unoccupied area of the property between roadways is paved with brick on a concrete foundation. This pavement slopes from the market and shed both ways toward concrete gutters which are constructed around the market area between it and the roadways of the adjacent streets. About 3 feet inside of each gutter are a number of garden plots, six being spaced equally along each side of the market area. These are surrounded by concrete curbs and planted with trees and shrubbery.

of the common council and the superintendent of the market; the fee being 25 cents per day for a unit space. If a less space is desired a smaller fee is charged. No one except the producer or one who has purchased produce outside of the city can sell his goods in the market area.

All hay sold must be weighed on the city scales above referred to and all wood must be measured by the superintendent, who gives the owner a certificate of weight or measurement, the charge for which is 10 cents. It is not permitted that teams or wagons shall use the public streets or alleys for the sale of fruit, vegetables or other farmers' produce; although farmers and licensed hucksters may peddle from house to house within the city limits.



CROSS SECTION OF HITCHING SHED



HITCHING SHED, MADISON, WIS.

The health department has the right to inspect all goods in the market and refuse permission to sell any meats or other articles which are not wholesome. Another sanitary provision is that during the summer months the superintendent shall furnish a considerable number of water tight barrels and tubs and that all occupants of stalls or stands must throw filth, washings and refuse matter into these. The waste matter received by them is removed by city carts immediately after

market hours. The superintendent is given police power and instructed to maintain order within the market area.

Before the opening day of the market more than 5,000 circulars were sent to farmers living within a few miles of the city informing them concerning the market and urging them to make use of it. A considerable number of farmers responded and the market has proved valuable and a convenience to the housekeepers of the city.

## OXIDATION OF SEWAGE-POLLUTED SALT WATER

Dissolved Oxygen Most Satisfactory Criterion of Purity of Harbor Waters—Experiments on Re-aeration at Massachusetts Institute of Technology—Partial Purification by Forced Aeration—  
Report of Col. Black and Prof. Phelps

The problem of disposing of the sewage of Greater New York, including consideration of the several drainage districts and the questions of collection and disposal of sewage from these districts, was the subject of a report made to the Board of Estimate and Apportionment of that city by Col. Wm. M. Black, corps of engineers, U. S. Army and Prof. Earle B. Phelps. These investigators concluded that the most satisfactory criterion of the purity of the waters of New York harbor and vicinity was furnished by the amount of dissolved oxygen in the water; and that this natural purifying agent should not be drawn upon to an extent which would reduce it below 70 per cent of the full saturation value. This standard of purity they would apply not only to average conditions throughout the harbor and its tributaries, but also to the average condition within any of the sub-areas into which, for the purposes of this study, they divided these waters. The principal difficulty of the problem lies in the tendency to local pollutions rather than in the insufficiency of the water of the entire harbor to digest the sewage. "If the sewage of the entire drainage area tributary to these waters could be concentrated at the two entrances, namely, at the Narrows (the entrance from the ocean) and at Throggs Neck (the entrance from Long Island Sound), we estimate that the standard of purity laid down could be maintained, for the present at least, and for the immediate future until such time that the population of this entire district has reached 7.4 millions." But any other arrangement of discharge will produce local nuisances, even with the existing population. The only alternative method of maintaining the standard appears to be by purifying the sewage to a degree which will reduce its oxygen re-

quirements to one-third their present value. In reaching this conclusion the authors of the report made no allowance for re-aeration, they having determined to their own satisfaction that the re-aeration factor is one that is without material significance in the case of the waters of New York Harbor.

In studying what methods seem most available for removing from the sewage two-thirds of its present oxygen requirements before discharging it into the bay, Messrs. Black and Phelps carried on experiments at both Brooklyn and Boston, from which they concluded "that a degree of purification which will reduce the oxygen requirements of the sewage to about one-third their present value during the summer months can be obtained by a short period of septic treatment followed by forced aeration. The cost of such treatment will not exceed, all told, \$2.00 per million gallons, and further studies will doubtless make it possible to reduce this cost materially."

Although urging that the standard of dissolved oxygen in the harbor waters be fixed at 70 per cent of the full saturation value, they suggest the establishment of a standard of purity upon a firmer basis of fact than that which now exists. At present there are differences of opinion upon this point, but these opinions have only a slight satisfactory basis of observed facts. They therefore recommend most thorough investigations of the subject, the result of which shall be submitted to the impartial judgment of a commission of engineers for final settlement. We have in previous issues mentioned the fact that other engineers have held that 50 per cent saturation was ample to prevent nuisance, and it was even stated that the River Thames in England frequently reached 30 per cent without being noticeably offensive. According to Colonel Black, 70 per



cent saturation will permit the existence of major fish life, although other forms of fish life can exist until the limit of 30 per cent has been reached.

The amount of oxygen found at saturation in fresh water is 6.38 grains per cubic foot at 32 degrees F. and 4.04 grains per cubic foot at 68 degrees. For sea water the corresponding figures are 5.10 grains and 3.29 grains. Considerable study was given to the subject of re-aeration of water in New York harbor, and it was decided by the investigators that "under the most favorable assumptions the absorption of oxygen from the air in the waters of New York harbor will give an increase of 1.9 per cent of the saturation value in 24 hours." On the basis of this amount of re-aeration and a reduction of oxygen to 70 per cent of the saturation value, together with the calculation that the total volume of water in New York harbor between the Narrows and Throgs Neck is 251,418 million gallons, is based the estimate that this volume of water is sufficient to care for the sewage from a population of 7.4 millions of people. From studies made of Brooklyn's sewage it was determined that the reduction to a stable form of one million gallons of sewage would require the consumption under summer conditions of between 1,500 and 6,000 pounds of oxygen, of which from 500 to 2,000 pounds is taken up in 12 hours. If the re-aeration is at the rate stated, it would amount to the absorption of about 0.08 grain of oxygen per gallon of sea water; from which could be calculated the amount of water required to furnish the 2,000 pounds per day necessary to oxidize one million gallons of sewage, assuming that this water swung back and forth and were not wholly or partly displaced by fresh water by each tide or from an inflowing stream.

Professor Phelps refers to investigations conducted by himself some years ago at the sewage experiment station of the Massachusetts Institute of Technology, but which had not been made public previous to this report. The fundamental physical law is so complex that he decided that a satisfactory generalization could be arrived at only through a mathematical study of the law itself, coupled with an experimental investigation to determine constants. He discusses this theory at some length in the report. From the application to this law of experimentally determined constants he obtained a number of values, among which were those given in the accompanying table, showing the pounds of oxygen absorbed from the atmosphere per million gallons of a quiescent body of fresh water; this varying with the duration of the test and with the initial concentration.

*Amount of Oxygen Absorbed from the Atmosphere by a Quiescent Body of Fresh Water at 20 Deg. C. During Stated Periods of Time, at Stated Depths and with Stated Initial Concentration; Expressed in Pounds per Million Gallons.*

Initial Concentration Per Cent Saturation.	Time in Hours.				
	1	6	10	20	24
Depth 5 Feet.					
0.....	0.636	1.66	2.14	3.00	3.41
10.....	0.566	1.49	1.93	2.70	3.06
30.....	0.444	1.16	1.50	2.09	2.39
50.....	0.322	0.827	1.07	1.50	1.68
70.....	0.193	0.497	0.643	0.904	1.03
90.....	0.064	0.166	0.214	0.234	0.341
100.....	0.00	0.00	0.00	0.00	0.00
Depth 10 Feet.					
0.....	0.229	0.804	1.11	1.51	1.66
10.....	0.207	0.720	0.995	1.06	1.49
30.....	0.161	0.566	0.781	0.820	1.16
50.....	0.115	0.398	0.551	0.581	0.827
70.....	0.069	0.245	0.331	0.352	0.497
90.....	0.023	0.080	0.111	0.12	0.151
100.....	0.00	0.00	0.00	0.00	0.00
Depth 15 Feet.					
0.....	0.115	0.459	0.666	0.735	0.996
10.....	0.107	0.413	0.597	0.658	0.896
30.....	0.077	0.322	0.467	0.513	0.696
50.....	0.061	0.230	0.337	0.367	0.497
70.....	0.031	0.138	0.199	0.222	0.299
90.....	0.012	0.046	0.067	0.074	0.100
100.....	0.00	0.00	0.00	0.00	0.00
Depth 20 Feet.					
0.....	0.077	0.306	0.436	0.513	0.712
10.....	0.069	0.276	0.390	0.459	0.643
30.....	0.054	0.214	0.306	0.360	0.497
50.....	0.038	0.153	0.214	0.260	0.352
70.....	0.023	0.092	0.130	0.153	0.214
90.....	0.008	0.031	0.044	0.051	0.071
100.....	0.00	0.00	0.00	0.00	0.00

Quiescent water, however, is not often found, and never in a body like New York harbor, among the affecting condi-

tions being the agitation caused by wind, currents, passing vessels, etc. From the results obtained by M. F. Sanborn in studying the Charles river basin, and the observations of Stevenson on the relation of fetch and wave height, the investigators concluded that the following relations exist: With a wind velocity of five miles per hour there will be a uniform mixing of the water to a depth of 10 feet; at ten miles the depth would be 31 feet; at 15 miles, 42 feet, and at 20 miles, 48 feet. These figures are for New York harbor, the assumption being made on the strength of Stevenson's observations that the depth of movement is proportional to the square root of the fetch, and that consequently in Boston harbor, for instance, the mixing would extend to only about one-half the depth given. The effect of passing vessels was not determined, but it was believed to be considerable, and to extend to a depth equal at least to the draft of the vessels in question. It was found that each minute about 1 per cent of the entire area of the harbor was passed over by a boat of some kind, varying from tugs to ocean steamers.

Tidal currents produce effects in two ways, by the moving stream passing through a changing cross-sectional area and thus causing horizontal and vertical cross currents, and by the under-run produced at the meeting of fresh and salt water. Mixing due to "rips" and "boils" caused by the moving currents is quite complete throughout the depth, and this agency is of great importance in the aeration of tidal waters. Taking into consideration the various affecting causes, the investigators estimated that the rate of absorption of oxygen in New York harbor, when the water is already 70 per cent saturated, is at a rate varying from 0.035 to 0.045 pound per million gallons per hour in the upper bay, middle and lower Hudson, 0.012 pound in the upper Hudson and from 0.048 to 0.051 pound in the East river.

#### EXPERIMENTS OF FORCED AERATION.

The experiments made were divided into three series; the first in shallow tanks, with both crude and septic sewage, to determine whether the stability of raw or septicized sewage could be increased by forced aeration, and under what conditions, with what volumes of air and at what cost maximum economic efficiency could be attained. The second series used septic sewage alone, in a deep tank, to determine if the air applied could not be made to yield more of its oxygen to the sewage. The third series was conducted with a biolytic tank in an effort to determine the desirability or otherwise of first septicizing the sewage before aeration.

The first series were conducted at the sewage disposal works located in East New York, where sewage was pumped to an elevated supply tank, from which it flowed by independent lines to a septic tank and to an aerating tank. The sewage from the septic tank overflowed to a second aerating tank, which thus enabled them to aerate both crude sewage and septic sewage. During a portion of the investigation aeration of the septic tank effluent was accomplished by pumping compressed air to the bottom of the tank through six parallel lines of pipe, each furnished with a row of 1/8-inch holes along its top line. For the purpose of better distribution of this air a fine-mesh copper gauze was soldered around the air pipe so that the space between the pipe itself and this gauze became virtually an air chamber. During the second period of the investigation, in addition to the arrangement just described, the tank was provided with frames upon which common laths were nailed in such a way that vertically and horizontally these laths were about 1 inch apart and at an angle of 45 degrees. The rows of laths were also staggered both vertically and horizontally. This arrangement gave throughout a very large surface for the development of bacterial growths, upon which reliance was placed for improved efficiency, and which also served to improve the distribution and delay the passage of the air as it flowed upward. The aerating tank used with the crude sewage was constructed in the same way at the beginning.

The total capacity of the septic tank was 3,200 gallons, of the



septic aerating tank 1,495 gallons, and of the raw sewage aerating tank, 740 gallons. The average rate of flow through the raw sewage aerating tank was maintained at about 13,000 gallons per day, making the period of treatment 1.4 hours. The septic tank and its aerating tank were at first operated at the rate of 13,000 gallons per day, making the period of septic action 5.9 hours and of aeration 2.8 hours. Later the capacity of the septic tank was decreased one-half and the rate of flow proportionately, thus giving the rate of septic treatment 5.9 hours and of aeration 5.6 hours.

The "relative stability" referred to below "is the ratio between the amount of oxygen available in the diluted sample and the total amount of oxygen which would be utilized by that sample in its complete oxidation. Thus a sample of such a mixture which had a relative stability of 50 per cent would contain just half the amount of oxygen which would be required to render it perfectly stable. This method is easy of application and is the one most commonly employed in sewerage work. A more delicate method for obtaining the same information, and one which was devised for this work and used here for the first time, is the following:

"Suitable mixtures of the sewage in question with oxygen-saturated water are made and the total amount of oxygen in the mixture determined immediately. The sample is then stored in a tight bottle for a suitable period of time and a redetermination of the amount of dissolved oxygen present is made. The rate at which the oxygen disappears under these conditions gives us an index of the oxidizability of the organic matter and a more direct measure of the probable effect upon the stream than is given in the methylene blue method."

The average of the first series of experiments, extending from April to August, inclusive, showed an increase of volatile suspended solids from 44 parts to 47, and of fixed solids from 24 parts to 29. Oxygen consumed was decreased from 75 parts to 58; free ammonia from 46 to 35. The combined effect of septic action and aeration resulted in a reduction of volatile suspended solids from 44 parts to 26, and of fixed suspended solids from 24 to 23; of oxygen consumed from 75 parts to 53, and a decrease of free ammonia from 46 parts to 26, and of total organic nitrogen from 18 parts to 17.

Direct aeration at the rate of 0.2 cubic foot of air per gallon of sewage increased the stability by about 45 per cent in a 25 per cent mixture of sewage and water, and 53 per cent in a 30 per cent mixture. During a second period the rate of application of air was decreased to 0.09, and the increased stability was 72 per cent in a 25 per cent mixture. When 0.36 cubic foot per gallon was applied the increased stability was 32 per cent in a 25 per cent mixture. During a fourth period the time of contact with the air was increased from 2.8 to 5.6 hours, the rate of application being 0.67 cubic foot per gallon, when the stability was increased only 13 per cent. During a fifth period, when the screens already described were installed, this resulted in an increased stability of 62 per cent. During the sixth period the air was diminished to 0.23 cubic foot per gallon and the time of contact to 2.8 hours, with the result of 89 per cent improvement in stability. These percentages are in comparison with the raw sewage for the corresponding period, and this showed a constantly decreasing stability, as is always the case as summer approaches. A part of the improvement in the last case is doubtless due to the decreased stability of the sewage itself already noted, and the same statement may be made in regard to the second period of the raw sewage experiment, in which decreasing the amount of applied air did not materially affect the result. The results of these last periods are approaching summer conditions, and it is doubtless true that with the coming of warm weather and the consequent lessened stability of the crude sewage high percentages of improvement are more readily obtained. As it is summer conditions that really limit any dilution process of sewage disposal, these warm weather results have the greatest significance in this present study.

The results obtained by the putrescibility coefficient are, when suitably interpreted, the most satisfactory basis for determining the results of work of this character. This coefficient is determined mathematically to express the rapidity with which the oxygen is used up in a mixture of water and sewage. Using this coefficient, and on the assumption that the dissolved oxygen shall not be reduced by more than 20 per cent in 6 hours, the percentage improvements in the sewage under treatment as shown by the data were as follows:

*Percentage Improvement in Condition of Sewage Brought About by Aeration, as Measured by Concentration of Sewage Required to Reduce the Oxygen Content of Water 20 Per Cent, in Six Hours.*

Period.	Air, Cu. Ft. per Gallon.	Time of Contact, Hours.	Improvement, per Cent.
1.....	.20	1.4	45
2.....	.09	1.4	136
3.....	.36	2.8	118
4.....	.67	5.6	65
5.....	.77	5.6	177
6.....	.23	2.8	320

These experiments had satisfied the investigators that partial oxidation of crude sewage was practicable, but the volume of air required seemed unnecessarily high. Moreover, examinations of the air leaving the tank showed that its oxygen content was far from being exhausted; in fact, the actual amount of oxygen absorbed from the air applied was infinitesimal. It seemed, therefore, that the same body of air might to good advantage be used to treat a large volume of sewage at a consequent decreased cost of pumping, and that this could only be obtained by increasing the depth of the tank. To test this a tank 21 feet in depth was built out of 2-foot lengths of 24-inch vitrified sewer pipe set up in a vertical stack. Through the central axis of this stack a 3/4-inch iron pipe passed from top to bottom and upon this pipe circular discs of No. 12 expanded metal lathing were placed at 1-foot vertical intervals. Sewage was admitted to this stack through a 2-inch pipe at the bottom, which brought the overflow from the septic tank used in the previous experiments. The sewage overflowed from a pipe at the top of the stack. Compressed air was pumped through the 3/4-inch pipe just mentioned and distributed at the bottom of the stack through 1/8-inch holes spaced 2 inches on centers upon four cross-arms, 90 degrees apart, extending from the center to a point near the periphery.

There were two sets of tests, during the first of which there were a four-hour period of septic treatment and a one-hour period of aeration; and during the second the time was doubled. The air was applied by a compressor at a rate of approximately 0.23 cubic foot per gallon in both series. Analyses of the air escaping from the top of the tank were made on several occasions and showed that about 2 per cent by volume of the total amount of air passed, or 10 per cent by volume of the oxygen content of that air, had been exhausted in passing through the tank. "It is therefore only a matter of engineering economy in the construction of deep tanks which will determine the most economical depth to be employed. Obviously the economy of this treatment increases in direct proportion to the depth of the tank."

It is well known that with increasing age of sewage there is a corresponding decrease in oxygen dissolved values and that under aerobic conditions the sewage becomes exceedingly avid for oxygen so that an old septic effluent will often absorb almost immediately more oxygen than the original sewage would have absorbed in many hours. The investigators believed that this increased avidity for oxygen is due largely to the presence of easily oxidized gaseous or mineral compounds, and that the oxygen so used is largely wasted so far as the purposes in view are concerned. It was thought best, therefore, to obtain more data upon the desirability or otherwise of first septicizing the sewage before aeration. The investigations of this were carried on at the sewage experiment station of the Massachusetts Institute of Technology, where a tank of somewhat novel design was operated under the direction of Professor Phelps. This is essentially a deep rectangular tank with a hopper-shaped bottom. The sewage

enters through a pipe down the center and is discharged at a point near the bottom of the tank. It flows upward in a column whose cross-section is constantly increasing and whose velocity is constantly decreasing, overflowing at eight points about the periphery. The object of this was to prevent the accumulation of the products of decomposition in the bottom layers and to keep the sewage as fresh as possible consistent with satisfactory sedimentation. An aeration system was installed in the upper 2 feet of this tank similar to those used in the Brooklyn experiments; there being a series of seven horizontal air distributors, above which was a system of inclined slats 2 feet in depth. The rate of flow was such as to give a time of exposure to the air of approximately two and one-quarter hours. Owing to the difficulty in getting aerobic conditions in a tank which had been anaerobic for over a year the results of these experiments were disappointing.

Concerning the cost of aeration the authors of the report stated "At the rates of aeration which we have finally adopted this blower (a blower type of air pump having a capacity of 50,000 cubic feet of air per hour under a 5-foot head of water requiring 25 kw. of current, net) would care for a sewage flow of one-half million gallons per hour. At a cost of 4 cents per k.w.h. the cost for current alone would be \$2 per million gallons. This refers to small electrically operated plants at sewer outfalls. For larger installations the cost of power would not exceed one-half of this amount. We estimate the total cost of installation of plant in the neighborhood of \$2,000 per million gallons daily capacity, or about one-twenty-fifth the cost of sprinkling filters after deducting land costs. Labor charges should be exceedingly low. It should be further noted that, under conditions in which such a process might be necessary and sufficient, the necessity for its use would arise only during the summer season, of perhaps four months each year. If winter conditions demand treatment at all, then the summer conditions would not be met by aeration, since the variations we have noted between summer and winter sewage are greater than the improvement obtained."

#### DES MOINES CIVIC CENTER

In our issue of May 24, in connection with a description of the city planning exhibition in Philadelphia, we referred to and briefly described an interesting model of a civic center and river front improvement project which the city of Des Moines has carried a long distance toward completion. We are able to show herewith a photograph of this model, which is now on exhibition in Des Moines. This shows in the foreground, from left to right, the coliseum or auditorium, the library, and the post office. On the other side of the river are the municipal building or city hall, the soldiers' and sailors' monument, and the armory. The three buildings on the near side of the river are completed, as is also the city hall on

the further side. The armory has not yet been built, and the soldiers' and sailors' monument now occupies another position, but it is proposed to move it to the location shown. These models are constructed of plaster paris. The parkings, existing and proposed, around the buildings are shown in the model; also the bridges, streets, etc.

#### CLEANING SEWERS IN COLUMBUS

THE intercepting sewer of Columbus, O., was found two or three years ago to be in need of cleaning, and work was begun in 1909 and continued during the year 1910. It was found that while cleaning the upper part of the section cleaned in 1909 a considerable amount of the sediment was stirred up and redeposited lower down; on account of which it was necessary to again clean this section the following year. The method employed in cleaning was to shovel the material by hand into buckets. Six of these buckets were carried by a boat which, when loaded, was floated to the nearest manhole below and there raised one at a time with a rope and pulley. Preliminary investigations by City Engineer Maetzel had shown that this method was better and more economical (where the sewer was large enough to permit men to enter and work in the same) than the use of any cleaning machine of which he knew. This intercepting sewer varies in diameter from 30 inches to 87 inches, with a short section of 65 x 81. It was proposed to place sand catchers at each of the contributing inlets to obviate the necessity of again cleaning the sewer in a short time.

Sewers too small to be entered were cleaned by dragging. In 1910 a Stewart sewer cleaning machine was used which, Mr. Maetzel stated in his annual report, greatly facilitated the work of cleaning such sewers. During the year 21,791 feet of sewers from 12 inch to 30 inch in diameter were cleaned at a total cost of \$837.71, this averaging about \$175 per mile. One section of the sewers so cleaned had been previously cleaned in 1902 at a cost of \$281 per mile.

One hundred and forty-seven automatic flush tanks are connected with the system and were furnished with water under arrangement with the city water works at a fixed price of \$10 per year per tank. Repairs and inspection on these tanks cost \$106.29 in 1910.

During the year 1910 the number of catch basins in the city was increased from 3,022 on January 1, to 3,151 on December 31. The aggregate number cleaned during the year was 9,837, 1,962 cu. yds. of dirt being removed. The gang cleaned an average of 31.43 basins as a full day's work. The average amount of dirt removed per basin cleaned was 0.2 cubic yards. The average number of cleanings per basin was  $3\frac{1}{4}$ , and the average number of days between cleanings, 112.

The cost of this work for the year was \$2,354.80 for labor and \$37.02 for tools and repairs to the same. This gives the average cost per basin cleaned of 24.3 cts. and the average cost per cubic yard of dirt removed, \$1.218.



MODEL OF CIVIC CENTER, DES MOINES



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AUGUST 16, 1911.

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## Aeration of Sewage

SEVERAL months ago we learned unofficially that experiments  
with the oxidation of sewage had been conducted which had  
demonstrated the practicability of doing this and the efficiency  
of it in purifying the sewage. The details of these experi-  
ments and the results obtained have now been officially re-  
ported and an abstract of this report is published in this issue.

We must confess that we are disappointed in this report,  
as the experiments do not appear to us to be at all conclusive  
nor the results obtained in the experiments themselves to be  
particularly profitable; and it is the common experience and  
generally expected that results obtained in practice do not  
equal those secured in laboratory experiments. The authors  
themselves state that their method of aeration is not recom-  
mended for use under conditions in which the winter sewage  
will need any treatment, since the reduction of organic matter  
and of oxygen consumed which is obtained by that system of

forced aeration is no more than about sufficient to change  
summer sewage to the ordinary condition of winter flow.  
To effect this result they estimate will cost \$2.00 per million  
gallons, and this estimate seems to us based on insufficient  
grounds, since in their experimental work they were not able  
to attain as low a cost as this, but base this estimate on im-  
provements which they think can be made.

We do not wish to appear to express the opinion that satis-  
factory and economical results cannot be obtained by forced  
aeration of sewage; although we very much doubt whether  
much benefit can be derived from this treatment alone without  
a thorough preliminary straining. But it does not seem to us  
that it has been determined by these experiments that such  
treatment will produce results at all commensurate with the  
cost.

## Water Troubles in Baltimore

THE water department of Baltimore, Md., is between the  
two horns of a dilemma. The water in the reservoirs is be-  
coming low; also it is quite muddy. Alfred M. Quick, the en-  
gineer of the department, stated recently: "I do not know  
whether to wish for rain or clear weather. If it rains, and  
the rains are as heavy as some of the storms we have had  
this Summer, the water will undoubtedly continue muddy. If  
there is no rain we will face a famine."

Just at present the turbidity of the water is giving more  
concern to the citizens at large than the prospect of a drought,  
since the latter they learn only by hearsay, while the water is  
said to be so brown as to be unfit for drinking and to have  
an unpleasant odor. A number of citizens have been giving  
suggestions through the daily press for clarifying the water  
by household appliances and remedies. One man took an ordi-  
nary two-gallon oil can and punched a hole in the bottom  
of it the size of a lead pencil. He then filled the can with  
coal ashes, putting the larger ashes at the bottom and the  
lighter and finer ashes at the top. Water was led into the can  
by a rubber tube inserted in the spout of the can. After the  
first passage of the water, when fine loose ashes come through,  
the water is said to have run clear.

A druggist suggested that ten drops of tincture of iron added  
to a gallon of water will clarify it. Another has discovered  
that two teaspoons of baking soda will clarify a bucket of  
water if it be allowed to stand an hour after the soda is intro-  
duced. Another correspondent suggests a teaspoon of pow-  
dered alum in five gallons of water. Still another recommends  
powdered charcoal placed in a funnel which is inserted in the  
top of a bottle or jug; water being allowed to trickle slowly  
through the charcoal.

Certain business and industrial establishments are giving  
away water obtained from artesian wells, among these being  
an ice company, a brewery and a drug store.

## Cost of Sewer Construction in Portland

In the report for the year 1910 of Bion Bradbury, Jr., com-  
missioner of public works and city engineer of Portland, Me.,  
are given in considerable detail the costs of constructing sew-  
ers in that city during the year. While, of course, it is not  
desirable and almost impracticable to go into great detail in an  
annual report as to conditions under which work is done, still  
the information given makes the figures of cost much more  
valuable than is ordinarily the case. The essential features of  
a number of the sewer jobs are as follows:

In one there was 208.5 ft. of 8-in. vitrified pipe sewer, aver-  
age depth 7 ft.; material, ledge rock and loam. Cost per foot,  
\$3.10. The total cost was \$646.61, of which \$381.27 was for  
excavating, blasting, etc., and the balance for labor, teaming  
and material connected with the construction of the sewer,  
including one manhole.

In another sewer, by contract, 825.5 ft. of 10-in. pipe sewer  
with two manholes, average depth 6 ft.; material, water-bearing  
sand. Cost per foot, 88.77 cts. The total cost was \$732.86.



The earth excavation cost 29 cts. per linear foot, the laying 5 cts., the manholes \$15 each, the bricks \$27.50; the manhole frames and covers \$21.08 and the steps \$1.40. Engineering and inspection cost \$116.60; advertising \$10.50, and freight on the pipe \$20.14.

In a third, by contract, 505 ft. of 8-in. pipe sewer with two manholes; average depth 8.4 ft.; material, clay and ledge rock. Earth excavation, 14 ft. deep, cost 60 cts. a running foot, and that 9 ft. deep cost 40 cts. a running foot, and rock excavation one ft. deep 40 cts. a running foot. Pipe laying cost 5 cts. a foot; manholes \$15 each. The total cost was \$555.28, or \$1.10 per running foot.

Sewer containing 2,131 ft. of 10-in. pipe and 367.6 ft. of 8-in. pipe and 10 manholes; average depth 13.4 ft., maximum depth 22.5 ft. Done by contract. The material was clay, sand and ledge rock, the soil being saturated with water even in dry seasons. The average cost per foot was \$5.18. Earth excavation 23 ft. deep cost \$3.50 a running foot; that 18 ft. deep \$3; that 14 ft. deep \$1.75; that 10 ft. deep 90 cts., and that 5 ft. deep 40 cts. Rock excavation one foot deep cost \$1.25. Six-inch underdrain was laid throughout at a cost of 40 cts. a foot. The engineering and inspection cost \$605.

Sewer of 12-in. vitrified pipe, 350 ft. long, including one manhole. Average depth 6.9 ft.; material, gravel. The average cost was \$1.04 per running foot. The total labor cost was \$177.68; pipe and branches \$115.08, brick \$10; inspection \$45; and the remainder was for manhole steps and frame and cement.

Sewer of 8-in. vitrified pipe 360.3 ft. long, including one manhole. Average depth 5.3 ft.; material, clay. The average cost per foot was \$1.10. The contract prices were: Earth excavation, 45 cts.; filling, 75 cts. a cubic yard; laying pipe, 4 cts. a foot; manhole, \$15 for brickwork, \$10.54 for frame and cover, and \$11 for brick. Pipe and branches, \$66.78. Inspection cost \$20.

As will be noticed, some of the above work was done by day labor, other sections by contract. These represent only about one-fourth of the pieces of work included in the report.

#### FRENCH CITY PLANNING PUBLICATIONS

The Association of Garden Cities of France, the object of which is implied by the name, has issued a number of publications which are very artistically gotten up and may be of interest to some American readers. Among these are *La Ville Modele*, *Banlieues-Jardins et Villages-Jardins*, *Art et Cooperation dans les Cites-Jardins*, *Cites-Jardins D'Amerique*, *Le Roman des Cites-Jardins*, *L'Enfant des Cites-Jardins*, *La Ville et Son Image*. These range in price from \$1.50 to 80 cts.; to which must be added the cost of transportation.

#### MANCHESTER MUNICIPAL GAS SUPPLY

The annual working report of the Manchester, England, municipal gas department has just been issued, and records the fact that, although the price charged for gas used in the city was the lowest ever imposed, the net result has been the highest profit on record.

The quantity of gas transmitted from the works showed an increase of 98,156,000 cubic feet, or 1.76 per cent, as compared with a decrease of 73,037,000 cubic feet, or 1.29 per cent, in the previous year. The number of gas consumers on March 31, 1911, within the city was 170,693, or 2,634 more than in the preceding year, while the number of consumers outside the city was 10,663, against 10,431 in 1910, the total increase for the year being 2,866.

The number of automatic meters in use at the end of the financial year was 63,663, as compared with 61,046 in the previous year, of which increase 2,473 have been placed in the city and 144 in the out-townships. The quantity of gas passed by these meters was 590,062,000 cubic feet, an increase of 50,305,000 cubic feet over the previous year. These automatic meters were inspected once in every five weeks, and the amount collected from them during the year was \$398,050.

This amount is represented by 19,630,986 pennies (penny=2 cents), weighing over 175 long tons.

The number of gas cookers owned and fixed by the gas department of the city was 53,730 on March 31, 1911, as compared with 49,948 for the year ended March 31, 1910. It is estimated that the quantity of gas consumed by these gas cookers in 1910 was 695,000,000 cubic feet, an increase of 39,000,000 feet over the previous year's figures. The gas department has also fixed 30,831 grillers in connection with the automatic and small ordinary meters. About 46 per cent of the consumers now have the free use of a cooker or griller.

On March 31 last the number of gas engines in use was 1,573, as compared with 1,613 in the previous year. The quantity of gas consumed by these engines was 380,994,000 cubic feet, an increase of 2,352,000 cubic feet.

The cost of coal and oil per ton carbonized was \$2.6448, as against \$2.6432 for the previous year, while the receipts for residual products rose to \$1.6796 per ton, compared with \$1.3780; this is a total saving of 30 cents per ton in the net cost of raw material, which, on the total carbonization of 498,709 tons, amounts to \$149,613.

In accordance with a resolution recently passed by the Manchester City Council, the price charged for gas used within the city for manufacturing purposes only will be reduced from 55 cents to 49 cents per 1,000 cubic feet after June 25, 1911, provided the annual consumption is not less than 500,000 cubic feet. The quantity of gas supplied to automatic meters for one penny (2 cents) will be increased after September 30 from 30 to 33 cubic feet within the city and from 25 to 28 cubic feet outside the city.

The gross profit on the year's working was \$925,223, of which sum \$225,008 was paid for interest on loans, leaving a net profit of \$700,215. Of the latter amount the gas department paid over to the city fund for the relief of the city rates the sum of \$226,292.

The total length of mains now laid is nearly 948.5 miles, an increase of almost 11 miles during the year. The number of public lamps within the city is 20,357, while outside there are 1,332. The incandescent system of lighting has been applied to all the lamps within the city, and the number of burners fixed thereto is 25,993.

High-pressure lighting has been installed in one of the sections of the city during the past year, and 22 lamps, each of 1,500 candle-power, have been fixed. This system of lighting is likely to be extended in the near future in the shopping quarters of the city.

The above information was furnished to the U. S. Bureau of Manufactures by Consul Church Howe, Manchester.

#### RICHMOND MUNICIPAL POWER PLANT

THE City of Richmond, Va., is building a municipal hydro-electric plant which is nearly ready for service, one of the chief objects of which is to furnish energy for the new water works pumping station, another being the furnishing of street lighting. The city has been paying \$56 a year for each of about 1,000 arc lights. The new pumping station, which has been built because the capacity of the old one had been outgrown, has a capacity of twenty million gallons per day, motor driven centrifugal pumps being used.

The supply for the new power plant is obtained by a dam in the James River at the pumping plant which furnishes a 20-foot head. Three 5-foot Morgan-Smith turbines have been installed and provision is made for the addition of a fourth when needed. The turbines are direct connected to General Electric 60-cycle generators of the revolving field-type, with a capacity of 425 kilo-volt amperes at 150 revolutions per minute. The motors in the pumping station are of the induction type using alternating current at 4,000 volts.

As is generally necessary with hydraulic plants, an auxiliary steam equipment is provided. This consists of two 500 h.p. Babcock & Wilcox boilers and two Curtis steam turbines direct connected to revolving-field alternators making 1,800 revolutions per minute.

## NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

### ROADS AND PAVEMENTS

#### New Plan for Paving Economical

Wheeling, W. Va.—One of the most important actions of the present Board of Control was taken when contracts were signed for the use of a new street paving machine, which will lay asphalt at about one-half the cost of brick. A five-years' lease was signed by the Board, the consideration being \$8,800. The new process has been used with great success in other cities, ten of the machines being now in constant use in Philadelphia. One great advantage of the new process is that the old paving can be used as a foundation and is considered ideal for this purpose, having settled to its permanent bed. The asphalt is applied in liquid form at a high temperature, and all inequalities are made perfectly smooth. An essential part of the machine is a large hood, with which the portion of the street to be paved is covered. Blasts of hot air are driven on the street until the temperature reaches about 400 degrees. The hot asphalt is then applied and adheres firmly to the foundation. As the machine is to be used in paving streets under the assessment plan, it will be an immense saving to property owners as well as to the city. To Joseph Brady, the well-known manufacturer, is due the credit for bringing the process to the attention of the Board of Control, having first witnessed it in practical operation on the streets of London, England. While on a recent Eastern trip Mayor Schmidt also witnessed the workings of the system and was very favorably impressed. The members of the Board are satisfied that the machine will prove a complete success for new paving and repair work.

#### Big Improvements Planned

Willows, Cal.—The Glenn County Board of Supervisors have passed an ordinance calling for a special election on September 12 to vote on the proposition of bonding the county for \$450,000 for new bridges and roads. Of this amount \$160,000 will be used for new roads and \$290,000 for bridges. The sentiment of the people appears to be strongly in favor of the bonds. Petitions circulated in the easterly part of the county asking the Supervisors to call such an election were signed by practically every taxpayer, and when the matter comes to a vote it is expected the bonds will easily carry. Little of the proposed work can be done this year, but the county will be ready to begin operations early next spring.

#### Favor Wood Blocks for Paving

Portland, Ore.—Use of Douglas fir in making blocks for street pavements was discussed at a special meeting of the street committee of the Council. J. N. Teal addressed the committee, saying that if Douglas fir was properly treated with preservatives it would make a durable material for street paving. He argued that if Portland first would give this material a fair test other cities immediately would follow the example. Mayor Rushlight and members of the committee expressed themselves as being heartily in favor of wood blocks, and it is likely that bids for this sort of paving will be received in competition with Hassam and bitulithic pavements, both of which are patented.

#### New Road Machine in Use

Forsyth, Ga.—The large 17,000-pound gasoline traction engine which was recently ordered by the County Commissioners of Randolph County to increase her facilities for working public roads, and also the three steel bridges, graders and other smaller road working instruments, have arrived, and will at once be put into service. The citizens of Randolph County are greatly enthusiastic over the good roads question, and as much effective work in behalf of road improvement is now being done in that county as in any other county in the State.

#### City to do Own Paving

Wilmington, Del.—The street and sewer directors have rejected all bids of contractors for paving, believing that the city can do its own work much cheaper and at least as good work as the private contractors. Each of the three directors is a thoroughly experienced business man, and with the municipal paving plant in operation they should be able to save the city considerable money.

#### Largest Paving Contract for \$200,000

Key West, Fla.—That the largest single contract ever given in Florida has been granted by Key West to the Southern Asphalt and Construction Company of Birmingham, was the recent announcement made by Eugene Fies, president of that corporation. The contract which was secured by Vice-President John Copeland and John Donelson, is for \$200,000 in asphalt blocks and brick paving on the island. Mr. Fies said that the order of Key West ran the total amount of work being handled now by the Birmingham concern up to the interesting figure of practically \$700,000. The local concern is a year old and is composed wholly of Birmingham citizens. The company was formed by the absorption of some other contracting firms. Mr. Copeland in speaking of the Key West brick portion of the work said that the Birmingham brick could not be used in that work. "We must get that commodity from Baltimore," said Mr. Copeland. "The freight rates to Key West between Birmingham and Baltimore differ so much that Birmingham cannot compete there. The rail haul from here is prohibitory, while the water haul from Baltimore makes that city far under us. Although we can sell brick far cheaper than Baltimore we cannot sell and compete with the water haul."

"Every scrap of work has been against bids of careful competitors and acute business men. The success is due principally to the fact that Birmingham is putting out a better grade of work than the other fellow," said Mr. Fies.

#### Oiling Highway to Kill Flies

Lenox, Mass.—A Lenox entomologist asserts that the absence of flies along oiled highways is due to the destruction of the eggs and larvæ by the application of tarvia and the by-products of oils which are being used to prevent dust. After conducting a series of experiments the Lenox man found there is almost a total absence of the stable or biting fly. Since it has been established that typhoid germs are carried by flies, also Asiatic cholera, and that there is strong evidence that the fly is also the carrier of tuberculosis and other diseases, the discovery that oiling highways lessens the number of common flies and almost entirely exterminates the stable fly appears to be of the highest importance.

#### Repaving with Old Asphalt

Leavenworth, Kan.—Mayor Doege has expressed himself as very much pleased with the terms that have been secured in the Shawnee street paving contract. "For the asphalt which is to be put down we are to pay but \$1.24 a yard," he said. "Of course the paving contractors will have the use of the old concrete foundation, but this ought not to cost more than 50 cents a yard, making the price of the paving, if all of it were to be new, about \$1.75 a yard. For the same character of paving put down by the same company Chicago paid \$3.05 a square yard on what is now pronounced one of the best paved streets in the country. Shawnee street, when completed, should be just as good." Asked what it was proposed to do with the old asphalt on the street the Mayor replied: "We will store it somewhere for use in patching. It is already properly mixed, and when reground and moistened will be just as good as new. I hope before spring to see the city acquire a modest asphalt repair plant so that thereafter it will be able to make repairs in asphalt streets occasioned by excavation made by the public service corporations. We can get the sort of plant we need for \$400 or \$500."



## SEWERAGE AND SANITATION

### No Protest Against Roller Towel Abolishment

Topeka, Kan.—The State Board of Health has issued an order prohibiting the use of roller towels on trains, in stations, in public schools and hotels after September 1. All the Kansas railroads have notified the State Board of Health that they would accept the order and would remove the roller towels from the washrooms on that date. Two years ago, when the common drinking cup was prohibited, some of the railroads made a fight against removing it. Not a single Kansas railroad has objected to the towel order. It is possible that some of the railroads will put paper towel rolls into their cars, but this has not been determined yet. All the train butchers will be supplied with both the paper towels and cloth towels and the patron may take his choice of three sizes at one penny up to a nickel or the boy will sell a towel for a dime to twenty-five cents.

### Report Slaughter Houses Unsanitary

New York, N. Y.—Commissioner Lederle has given out a statement from his report to His Honor the Mayor relative to a report made by the Bureau of Municipal Research entitled "Health Violations in East Side Slaughter Houses." The more important items charged by the Bureau of Municipal Research are as follows: (1) That the business of disposing of the offal in the city is illegal. (2) That the business of rendering fat collected from butcher shops in the city is illegal. (3) That a large portion (one-third to two-thirds) of the blood from the slaughtering of animals is permitted to run into the sewers and the river, in violation of the Sanitary Code. (4) That nowhere has any attempt been made to dispose of the offensive odors incident to fat rendering and the treating of offal, and they were allowed to escape into the outside air by means of electric fans. (5) That practically everything connected with the industry is carried out in an unsanitary manner, causing serious widespread nuisance and endangering the quality of the meat and products." The commissioner reports that these charges greatly exaggerate or entirely misrepresent conditions.

### Drinking Troughs to Be Kept Clean

Petersburg, Va.—Considerable complaint continues at the markets regarding people washing fish, ice cream cans and other unclean vessels in the water fountains, rendering them so objectionable that horses often refuse to drink from them. Agent W. J. Acree of the Society for the Prevention of Cruelty to Animals has called attention to the matter and steps will be taken to see that the fountains are kept clean. If parties are found washing unclean vessels at the drinking troughs measures will be taken looking to their punishment.

### Big Sewerage System Completed

Berlin, Germany.—The gigantic operation of draining and sewerage the city of Berlin is about to be completed after thirty-eight years of labor and the expenditure of \$42,500,000. When the work was begun in 1873 the capital had only 860,000 inhabitants; now it has 2,163,000, excluding the suburbs. The total length of the canalization pipes, which are of iron and earthenware, is just over 795 miles. This includes the rainwater tubes, which run into the Lower Spree, and the sewage conduits, which extend to the municipal sewage farms around Berlin. The beneficial effect of the modernization of Berlin's system of drainage is shown by the diminution of the cases of typhus fever from 1.40 per 1,000 in 1872 to 0.04 per 1,000 in 1909.

### To Improve Sewerage System

Lexington, Ky.—Upon invitation of the City Board of Health, Paul Hansen, of Louisville, State Sanitary Engineer, appeared before the City Council of Lexington and spoke in favor of a better sewerage system here. He characterized the sewer conditions of Lexington as bad and declared that the city faces a serious problem in disposal of sewage. He recommended a completion of the present system and the erection of an ample disposal plant even if a bond issue should be required. The Council will consider his recommendation at a subsequent meeting.

### Much Needed Sewer System Completed

Winlock, Wash.—A sewer system costing between \$7,000 and \$8,000 has just been completed at the town of Winlock and has supplied a need which has long existed in that city. The new system only covers the business district of the town at the present time, but it will be extended to the residence section as soon as possible. It is believed that the installing of the sewer will lead up to the establishing of a gravity water system for fire protection, as the city has suffered from several severe fires recently owing to the lack of water for fighting them.

### Urge Precaution Against Typhoid

Indianapolis, Ind.—Although the typhoid fever situation shows decided improvement as compared with last year, the city Board of Health has issued a warning, asking that citizens take even greater precaution to prevent the spread and transmission of the disease. Thus far this month there have been sixteen new cases reported, as compared with twenty-two, all of last July. The months of August and September, however, are the months most dreaded by the Health Department. Last August there were ninety-three new cases and in September there were 129. People who go out of the city should not drink water without boiling it if they do not know absolutely of the source of the water supply. They should not go to small towns and drink water from dug wells, which are nothing more than drain holes, unless the water is boiled.

### Extensive Sewer Laying

Jacksonville, Fla.—The Board of Bond Trustees will expend \$66,684 for laying of sewers in many streets.

### Sewer Farm Improved

Whittier, Cal.—Extensive improvements are being made at the city sewer farm whereby the water from the septic tank may be evenly and easily distributed over the entire 100 acres of the farm. More than 1,000 feet of cement conduits are being placed for irrigation of the farm. At present the entire operations of the farm are under the direct control of the city trustees and the water from the city sewer system will nearly suffice to irrigate the tract.

### Public Drinking Cups to Remain

Saginaw, Mich.—President M. W. Tanner of the Board of Health of Saginaw does not believe that instructions to abolish public drinking cups throughout the State are mandatory and does not propose to take any steps looking to abolishing public drinking cups in that city. "I do not believe," said he, "the State Board of Health has power to compel us to abolish drinking cups in such a summary manner. Sanitary drinking water places for the public are to be commended; but we should not discard everything now in use and leave the people with no such privileges at all. The Saginaw Board of Health is looking after the general public welfare at all times, but I think believes in a conservative policy in some directions."

### Ask Injunction Against Garbage Plant

Newburg Heights, Ohio.—Newburg Heights village made good on long and oft-repeated threats last week in Common Pleas Court. Suit was begun against the city to enjoin the operation of the garbage disposal plant located in the confines of Newburg Heights, and which has been the subject of long and vociferous protest by Newburg Heighters. The suit is directed against the city in an effort to force a suspension in the operation of the garbage reduction plant within the corporation limits of Newburg Heights, also against the B. & O. railroad to prevent the hauling of the garbage from the dump beneath Central viaduct to the reduction plant. "Foul," "unsanitary," "offensive" are some of the epithets directed at the garbage plant and odors arising therefrom by Newburg Heights in its petition. For several years residents of the village have put up with the nuisance, the petition asserts. The garbage plant, with its malodorous material, is a breeding ground for flies and other insects which are threatening the health and have already overcome the good nature of Newburg Heighters, according to the petition. Large quantities of water eliminated from the garbage during the process of reduction is emptied into Mill creek, which runs through Newburg Heights on its way to the Cuyahoga River, likewise furnishing a breeding place for germs and bad odors.



## WATER SUPPLY

### Water Rates Reduced

Waterloo, Ia.—The water trustees on August 4 reduced the water rates from 12½ to 15 per cent. This reduction was made possible by an agreement made between the trustees and the City Council that the city would pay the water department for water used in public and semi-public buildings, this payment, however, to be only the actual cost of pumping the water, which is about 12 cents per thousand gallons. The buildings referred to include the City Hall, churches, hospitals, Y. M. C. A. and similar buildings. The Council proposed to raise the necessary funds by adding one mill to the tax rate.

### Company Refuses Rates Set by Council

Leavenworth, Kans.—The Water Company, under the terms of its franchise, granted thirty years ago, has what amounts to a perpetual franchise unless the city regulates the rates or buys the plant or builds a new one. The company refuses to "accept" ordinances regulating the rates. At least that is the explanation the president of the company gives for charging 50 cents a thousand gallons whereas the ordinance passed ten years ago places the maximum at 45 cents. It states "The water rates to consumers during the continuance of this franchise shall be as follows, except that any rate may be modified or changed by joint agreement of the city and company." Mr. Hewitt says the company never accepted the ordinance passed during the Anthony administration. It is a fact however that the company accepted the rate granted for city hydrants under the ordinance, and also accepts payment from the Abernathy Manufacturing Company on the basis set by that ordinance. It has been suggested that water users refuse to pay more than the rate fixed by ordinance.

### To Guard Against Water Shortage

Petersburg, Va.—At a meeting of the Common Council last week an ordinance providing for the better conservation of the city's water supply in cases of emergency, offered by Councilman McCulloch, was adopted. The ordinance requires the erection of a gauging rod at the storage reservoirs for the proper measuring of the depth of water therein. When the water reaches the depth of twelve feet or less the Mayor is to be notified, and he is required to issue a proclamation, warning the public to be economical in the use of water and forbidding its use for sprinkling lawns and streets. The ordinance imposes a fine of \$10 on every consumer who violates its provisions, and directs that the water shall be cut off from his premises.

### Water Revenue to Be Increased

Montgomery, Ala.—Inspectors of the city Water Works Department have finished examinations of all the water connections in the city, and by their work the city treasury will be enriched by some four thousand dollars a year. There were hundreds of connections of which the department had no record and citizens were using the city's water free of charge. Now there is a record and they will have to pay for it. In many instances the books showed only a faucet connection in a house and the city was only getting a flat rate of \$1.50 for use of water. Inspectors found that since these faucets were installed owners of property had put in sanitary connections and bathrooms and used many times over the amount of water than they were paying for, and the city had no record of it.

### Leaks in Reservoir Stopped

Frederick, Md.—The Vulcanite Paving Company last week turned over to the City Council the reservoir which has been undergoing repairs. The reservoir has a capacity of 12,000,000 gallons, and some time ago leaks developed through which over 100,000 gallons ran away every day. Frederick is now being supplied from a reservoir the capacity of which is but 4,000,000 gallons, and the reopening of the larger pool will be hurried to care for the residents in case of drought.

### Drinking Fountains for School

Hutchinson, Kan.—The School Board has ordered fifty sanitary drinking fountains from an Eastern firm. They will be installed in some of the schools that do not have them now. The teachers have found it impossible to keep pupils from drinking out of one another's cups.

### Water Supply to Be Conserved

Raleigh, N. C.—The situation as to Raleigh's water supply is getting decidedly acute again, with great danger that it will become necessary to cut off the water supply at intervals soon in order to have in the reservoir enough to meet actual necessities. The city used 1,250,000 gallons one day recently, and only pumped into the reservoirs about 800,000 gallons. The reservoirs lost four feet of water. Mayor Robinson has issued an appeal to the citizens of Raleigh to be just as sparing with the water as possible and to co-operate in every way with the water company in conserving the water supply. The Weather Bureau here holds out little prospects for rain for several days to come. Raleigh had a number of good rains lately, but the last one passed completely around the watershed that contributes to the city water supply, although it rained heavily in the city and sections outside the city.

### Drouth in Kentucky

Lexington, Ky.—The present drouth is the worst known in years in eastern Kentucky, according to reports from that section of the State. Fleming County has called upon neighboring counties for help and 10,000 barrels of water have been shipped there. Tobacco and all other crops have been severely affected. It has been five weeks since a heavy rain has fallen. Where smaller streams are not entirely dry they are at the lowest stages known in years.

### Ask New Municipal Water Works

Akron, O.—Solicitor Greenberger has made oral application before Judge Vickery, of Cleveland, to have a receiver appointed for the Akron Water Company. It was a new break in a pipe in Fern street which decided the city to ask for a receivership. Since the company offered to sell to the city there have been half a dozen water famines. Pipes have burst, shutting off the city's supply, and suit after suit has been brought against the company by the city. Agitators have been insisting that the city establish an entirely new plant for municipal ownership and decline to buy the company's plant.

### Hudson Municipal Plant in Operation

Hudson, O.—Hudson now has a water plant that is up to date. All of the water mains have been placed in the streets and last week for the first time water was turned on. The Hudson plant has a capacity of 200,000 gallons daily. The water is secured from five deep wells, and is the purest water in the State. The old town will, within a month, have electric lights on all of the streets and in the homes, stores and shops. The work of placing the telephone wires underground is nearly completed. In short, Hudson is now the model town of the State.

### Questions City's Right to Acquire Water Works

Richmond, Ind.—Attorney A. C. Lindemuth, representing E. M. Campfield & Co., questioned the city's legal right to acquire the water works property in accordance with the provisions of the bid submitted. The initial hearing on the matter of a new franchise for a municipal water supply was adjourned. If the city cannot pay cash and obligates itself in excess of the 2 per cent debt limit, the attempt to purchase is illegal and void. However, he added, the city may pay in annual instalments, provided it does not obligate itself until the delivery of the materials or goods purchased. He cited for illustration the contract for the hydrant rentals, which for a period of twenty-five years would aggregate a total greater than the debt limit. However, he said the Supreme Court has ruled that necessary commodities, such as water, light, etc., may be contracted for, and the city may obligate itself to pay, provided it has the money and pays as the goods are delivered and no additional obligation accrues.

### Titusville to Have Water Works Plant

Titusville, Pa.—Work has just been completed on an eight-inch well to supply water for the city of Titusville. A test well was put down about one year ago and water secured that is shown by analyses to be of the best quality. The volume has also been thoroughly tested and found to be satisfactory. As a result of these tests the eight-inch well was put down and a modern system of water works will soon be installed.

## STREET LIGHTING AND POWER

### Want Cheaper Light for City Buildings

Newark, N. J.—In an effort to obtain for the city cheaper rates of lighting for its public buildings, Alderman Albert H. Biertuempfel, chairman of the Committee on Municipal Lighting of the Common Council, proposes to carry his fight before the Public Utilities Commission. Mr. Biertuempfel announced that he has arranged to make a fight for a five-cent rate, or at least a reduction in the present rate of ten cents a kilowatt hour for the city buildings for the use of electrical energy. The company's representatives are agreeable to the plan of supplying the merchants in Centre Market and the city lighting in that institution through one meter, charging the whole bill to the city and permitting it to charge the consumers for electricity along with the rent, but are not ready to reduce the rate for the combined patronage to five cents in accordance with the sliding scale of the company. To a suggestion of Mr. Biertuempfel that the city buildings be all grouped under one head and the reduced rate allowed on all the current used, the company officials took the view that the buildings are too widely scattered to admit of being grouped. In addition, the company men argued that under the utilities law they are not permitted to give the city a special rate for lighting. Such a concession, they claimed, would amount to a misdemeanor and leave the company liable to the penalty for that offense. The city's electrician, John J. Gaffney, pointed out that the rate charged Newark is 30 per cent higher than in other cities. He also called attention to the fact that in Massachusetts and Wisconsin the public utilities boards had permitted the charging of special rates to municipalities. Mr. Gaffney figured that the saving by taking all the current used in Centre Market through one meter charged for on the company's sliding scale would reduce the cost from \$9,000 to \$5,000.

### Experts Report Lights Unsatisfactory

Hudson, N. Y.—Although Mayor Van Hoesen vetoed a resolution recently adopted by the Common Council providing for the appointment of experts to examine into the power being supplied for street lighting purposes by the Albany Southern Railway, the Council has acted over his veto and employed two men to test the strength of the current. According to their report the average amount of light from each lamp is less than 1,000 candlepower. The city's contract with the railroad company calls for not less than 2,000 candlepower from each arc lamp, and members of the Council say they will refuse to pay for more light than is being furnished.

### Trim Shade Trees for Better Light

Binghamton, N. Y.—The Department of Public Works will undertake to remove the obstructing limbs of many shade trees throughout the city which now prevent a proper distribution of light. An ordinance in existence provides that all shade trees shall be trimmed at least 12 feet from the ground. Binghamton is a city of shade trees, but there is scarcely a street where the property owners comply with the law. Lighting experts who have visited this city declare that one-half of Binghamton's lighting is lost to the taxpayers due to the heavy foliage. On the outlying streets the trees prevent the rays of light penetrating to the sidewalk and all that can be seen is a small circle of light directly beneath the lamp. When the new lighting contract is awarded and the contractor begins stringing new wires the city will see that all shade trees are trimmed high enough to allow the light to reach the street. Engineers of the Binghamton Light, Heat & Power Company declare that the complaint made by taxpayers that the lights now placed are not adequate is not caused by lack of current, but because the lamps are unwisely distributed. The new system provides for the distribution of lamps throughout the city at equal distances so that all sections will be given the same light. Then if the trees are properly trimmed, electrical officials declare, the city will have three times the volume of light as at the present time for the same sum.

### Dispute Cost of Lighting

Hunter, N. Y.—The differences arising over the street lighting situation in the village of Hunter, Schoharie County, have been threshed out before the Public Service Commission by representatives of the village and the Schoharie Light and Power Company. Commissioner Decker presided over the hearing, which was upon an order to the company to show cause, and the dispute resolved itself into a question as to the price to be charged for street lights, there being a difference of \$2.50 in the price the village desires to pay and that which the company demands. Adjournment was taken until September. After expiration of the contract in November the company continued the supply from month to month until June 1. On that date, no agreement having been reached, the company shut off all the lights, and the village appealed to the commission to adjust the matter. The commission at once required the company to renew and maintain the lights until the case was determined, and appointed a hearing which was had. Under the contract, which expired in November, the company has been furnishing 32-candlepower lamps at \$15 per lamp. The village claims to have exercised its option and renewed the contract at the same price for a further term of five years. The company, however, asserts that this right was not exercised until March of this year, after the former contract had expired, and has offered to enter into a new contract to supply the lights at \$17.50 per lamp. In justification of the increase in price, the company claims that when the original contract was made reliance was placed upon the water power development, which since has failed largely for the greater part of each year; that the company has been obliged to resort to the more expensive method of generating its current by a steam auxiliary plant as the result of which the greater charge per lamp is warranted.

### New System for Street Lighting

Gadsden, Ala.—Business men along Broad street have come to realize the value of light and two large arches have been erected. It is proposed to do away with the side-lights on Broad street and install lamps along the sidewalks; also to put in some fifteen large lamps on either side of the street. In most cities where street lamps of this character have been installed the cost of the lamps has been met by the property holders while the city pays for the electricity used. The cost would not be heavy and the appearance of the street at night would be greatly improved.

## FIRE AND POLICE

### Tampering with Fire Hydrants

Portland, Ore.—Officials of the Water and Fire Departments have made the discovery that contractors and others are stealing water by the wholesale through the fire hydrants in various districts of the city, and that those who commit the thefts, not having the proper sort of wrench with which to operate the hydrants, have seriously damaged them, so that many of them could not be used in case of fire. Master Mechanic Phillips of the Fire Department has been making a careful inspection of all the hydrants and has found that the practice of using water from them without permits is general. In order to prevent it the fire committee of the City Executive Board has directed him to arrest every person found using water through a fire hydrant without a permit. He has made one arrest already. The practice has been that if any contractor or other party desired to use water through a fire hydrant, he must obtain a permit from the Water Department for the privilege and pay the Water Department for the water used.

### Gravity to Take Place of Engines

Tacoma, Wash.—That the city probably will not have to purchase any more steam engines for the Fire Department for years to come after the gravity water system is installed, was the declaration of F. H. Pettit, Commissioner of Public Safety. He said that as soon as the gravity system is completed the water pressure in the mains will be sufficient to do away with the big steamers in the residence parts of the city.

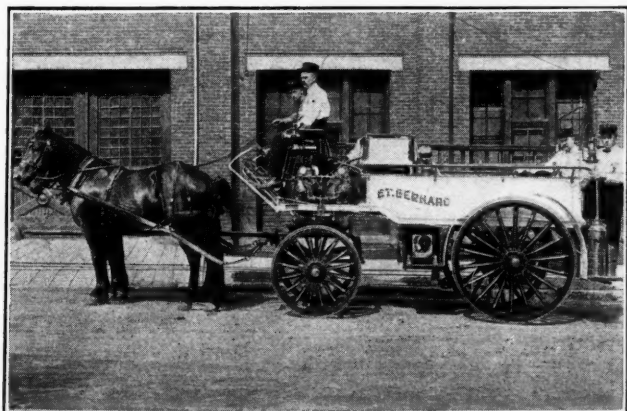


### Rates for Out-of-Town Fire Protection

Chattanooga, Tenn.—Commissioner Betterton, of the Department of Fire and Police, has recently held a number of conferences with manufacturers whose plants are located in the immediate suburbs, relative to the city giving these industries fire protection. He has sent a letter to the different factories located within easy reach of the Fire Department, offering such plants as desire it the use of the Fire Department. If but one company of fire fighters is dispatched to a fire, the firm served will pay the city \$30 for the run, and an additional \$30 for each company that responds to the call. The manufacturers are instructed to sign the agreement and return it to Commissioner Betterton. The agreement is as follows: We wish to make arrangements with the Fire Department of the city of Chattanooga by which said department will come to our plant in case of fire. We promise to pay to the city of Chattanooga \$30 for each run made by the department in our behalf, and, should it become necessary for the department to send more than one company, we promise the additional sum of \$30 for each company sent. It is understood that this arrangement is in no wise a contract with the city of Chattanooga, and said city is in no wise held responsible for failure of said department to respond to our call. It is understood, however, that the Fire Department will respond to our call unless otherwise engaged within the limits of the city.

### St. Bernard's Fire Protection

St. Bernard, Ohio.—St. Bernard has one of the best equipped fire departments of any village in southern Ohio. The fire wagon is of the latest combination type. A unique part is a double chemical tank system, which has proven a valuable asset to the department. The horses are fine specimens of horseflesh and are "joker" trained. The same system that prevails in the departments of large cities is carried out in the village. The active members at present



Courtesy of Cincinnati Tribune.

ST. BERNARD'S NEW CHEMICAL WAGON

are Chief George B. Frede, Leo H. Brockman and Henry Nailer. Charles Lohman is the substitute. Besides being a boy with the hose Lohman is also editor of the St. Bernard "Observer."

### Sliding Scale for Police and City Firemen

Knoxville, Tenn.—The sliding scale of wages for members of the police and fire departments of the city of Knoxville was sustained as legal by the Court of Civil Appeals in an able decision rendered by Judge H. Y. Hughes. The findings of Chancellor Will D. Wright, of the Knox County Chancery Court, are concurred in by the appellate tribunal, thus approving in every particular the contentions of the advocates of the sliding scale ordinance. This suit grew out of the City Council passing the sliding scale ordinance, in which the firemen and policemen were to be paid \$60 for the first year, \$65 for second year and \$70 for third year.

### Outing Garb Proposed for Police

Watertown, N. Y.—White shirtwaist, flannel outing trousers and light tennis shoes will form the uniform of the city police here if a plan recommended by several hundred citizens is adopted. It is proposed to give the police relief from the heat by allowing them to wear resort garb.

## GOVERNMENT AND FINANCE

### Careless Bookkeeping Costly to Municipality

Spokane, Wash.—According to George A. Liebes, former city controller of Spokane and now chief of the examiners for the State, the shortages other than those in the water department do not bear the earmarks of dishonesty but are the result apparently of error and negligence. As a result of these new discoveries and the general investigation into the city's bookkeeping system changes in methods are expected, chief of which will probably be that several hundred thousand dollars collected annually by various city departments in future be collected solely by the city treasurer through the auditor. One important result of the probable recommendation of the examiners in regard to the treasurer collecting all money due the city and the accounts being kept in a department separate from that where the transaction takes place will have a bearing on the present policy of the city to do work by day labor. An account of all day labor work, instead of being kept in the department of public works, will be kept in the auditor's office, so that the officials who have charge of the work will not pay out the money or keep the records of labor and material which go into each job. "The idea of a good system of accounting is to have the bookkeeping, collection of money, etc., handled by those who understand that line of work, presumably in the auditor's office, and not in the department where the work is done," said Mr. Liebes. "Let the various departments put in their time doing their construction work and performing all their other functions, but make the auditor the accountant for all departments."

### Unexpected Expenses Raise City's Figures

Topeka, Kan.—If the present plans of the city commissioners are carried out the cost of running the city government next year will be nearly \$400,000. This is \$90,000 more than the maintenance and improvement work last year. The budget for 1912 has been completed by the heads of the different departments and has been submitted to R. L. Bone, commissioner of finance and revenues. Commissioner Bone has not completed the entire budget, but the figures above have been compiled from the separate reports of the commissioners that have been published at different times in the columns of the State Journal. The cause for the big increase in the budget for the year 1912 has many explanations. Unexpected developments on the south side dike and bonds that come due next year have bolstered up the expenses for the next year. Hoping that they might reduce the increase in the city expenses to such an extent that the raise in the levy will be small and will not be noticed by the individual taxpayer the city commissioners have laid plans for a wholesale slicing of the estimates. It is thought by some of the city officials that it will be possible to cut from \$10,000 to \$25,000 from the first estimates.

### Many Improvements Under Commission Form

Columbia, S. C.—Under the commission form of government this city is expending thousands of dollars for municipal improvements. Contracts have been let for approximately two miles of standard street paving and this work is under way. Several miles of water mains have already been laid this year and more extensions are contemplated. The city has plans for a \$50,000 city jail and police station, and a committee is working on plans for an up-to-date abattoir to cost about \$15,000. Two motor fire apparatus of the latest improved type have just been accepted by the city. The cost of these machines was \$14,000. The sewer system is being extended as occasion demands. Applications for 8-inch main lines are in to extend for one mile. Wooden bridges are being torn away and concrete structures are being erected in their place. Concrete storm sewers are being laid in connection with the paving.

### Referendum on Prize Fight Measure

Purcell, Okla.—A referendum petition has been filed with the City Clerk calling for a vote of the people on an ordinance recently passed by the Council Commission which forbids boxing matches, prize fights and other like sports for hire.



### Investigating Municipal Indebtedness.

Boston, Mass.—Under a resolution passed by the Legislature during its closing hours Director Gettemy of the bureau of statistics is charged with the responsibility of investigating the whole subject of municipal indebtedness in Massachusetts, including loans made in anticipation of taxes, the amount and character of indebtedness incurred within and without the debt limit, so-called, and the amount of debt outstanding against which no sinking funds are being accumulated or for the extinguishment of which no annual payments of principal have been provided as required by law. There are 354 cities and towns in the commonwealth, and the results of the investigation must be reported to the next Legislature, so the task is one of some magnitude. Director Gettemy purposes to secure, if possible, for every city and town in the State a statement in regard to each item of debt, showing the purpose of its creation, the date of issue, date of maturity, the provision made for payment, the amount of the loan outstanding, the amount accumulated in sinking funds, the statutory authority for the loan and the rate of interest. It is also proposed to ascertain the valuation, amount of taxes abated and borrowing capacity, as a basis for determining the amount borrowed inside and outside the debt limit, and it is intended to classify the debt of each municipality, as far as possible, so as to show what portion has been issued under the general statutes and what portion under special laws, what portion consists of trust funds borrowed or used, and the amount of debt incurred for public service enterprises, cemeteries, etc., as distinct from general debt and tax loans.

### Sinking Fund Earns Interest

Chehalis, Wash.—City Treasurer F. J. Allen reported that he had paid off \$12,000 of the bonded indebtedness of the city, \$7,000 of which was on the light fund and \$5,000 on the sewer bonds. Within the past year he had kept the sinking funds so invested that they had earned the city \$727.48 more interest than the annual interest due on same. This surplus was turned into the current expense fund.

### Mayor Will Discount City Bills

Chattanooga, Tenn.—If it can be accomplished the city is to be placed on a cash basis. Both the city auditor and the city treasurer were notified by Mayor Thompson that, beginning with the present month, the city will take advantage of the 2 per cent discount allowed by creditors. If this can be accomplished it will result in the city saving several thousand dollars a year. Each clerk in the various departments will be instructed to bring all bills to the auditor's office as soon as they reach the departments and are approved by the commissioner. The plan will be tried, and if successful it will be permanently installed.

### Commission Government Proposition Carries

Sheridan, Wyo.—Sheridan will be the first city in Wyoming to operate under the commission form of government. At a special election held last week the proposition carried by a majority of 20 votes. The new plan will go into effect about the first of the year. A light vote was cast and the result was a surprise even to the advocates of the new plan, who feared that the organized opposition would result in its defeat.

### First Commission Plan Election

Newport, Ohio.—With Newport's first election under the commission plan of government but three months off voters and politicians say that the situation is a most peculiar one that tends to confusion as far as trying to figure out possible winners goes. It is generally admitted that the adoption of the commission plan has broken down political barriers with reference to municipal affairs. There are now six avowed candidates for Mayor, whereas under the old political system there were never more than three—Democratic, Republican and Socialist. Some of the candidates for Mayor have been making many promises of jobs, but when it is considered that under the commission plan the Mayor and four commissioners select all city employees the emptiness of such promises can be seen.

## STREET CLEANING AND REFUSE DISPOSAL

### Excellent Results from Oil Sprinkling

Woodbury, N. J.—At the rate oil is being placed on the roads and streets in this county Gloucester soon may be termed the "dustless county." Hundreds of gallons are being sprinkled as fast as a big tank and engine can do it. Thousands of square yards have been covered the past week, and all who travel the roads treated are pleased. In this city a month ago a couple of barrels of oil were distributed on Broad street with such good results that at the next meeting of the City Council it was voted to oil the entire section of South Broad street. For a time there was some objection because of the odor, and later because the oil was tracked on the sidewalks and into homes and business places. But there is no dust, and now that the oily surface is packing and the odor disappearing everybody is praising the action of the Council.

### Automatic Street Cleaners Ordered

Tampa, Fla.—Two new street cleaners that will not only sweep the refuse on the street but gather it and sprinkle the street all in one operation have been ordered by the sanitary department. Each machine will do the work of two men and pushcarts and do it better and quicker. The machines will cost \$1,150 apiece. They were ordered by Sanitary Chief Bailey and the sanitary committee of the Council, composed of Councilmen Regener, Licata and Chambers. The cleaners will be paid for out of the regular appropriation for the sanitary department. They will be delivered in about 30 days. One will be used in Ybor City and the other in the business section downtown.

### Street Sprinkling More Necessary Than Sweeping

Philadelphia, Pa.—Dr. T. Franklin Gifford, secretary of the Walnut Street Business Men's Association, has been deluged with letters relative to the dirty condition of Walnut street. The association was successful last summer in having the thoroughfare kept in excellent condition and the merchants intend paying another visit to City Hall unless things show a marked change for the better in one week. Dr. Gifford explained that his complaint was not so much against the sweeping or lack of sweeping of the street as it was on the lack of the use of water. He declared the street cleaners used little, if any, water, and their sweeping, sending clouds of dust in the air, was not only dangerous to health but made more dirt. "What we want," he asserted, "is a useful city before a city beautiful. Too much attention is being given to halls, pergolas, parkways and the like when that portion of the city which is seen by every visitor to Philadelphia is left unclean. We want Walnut street sprinkled from river to river."

### Only Garbage Is Taken

Milwaukee, Wis.—Cards have been printed by the street cleaning department urging the public to use metallic cans for garbage, to drain garbage and to wrap it in paper. No other materials in garbage cans will be collected.

## RAPID TRANSIT

### City May Own Subway for All Time

Chicago, Ill.—Mayor Carter H. Harrison has appointed a commission which is to design a passenger subway system for Chicago. Each of the commissioners will receive a salary of \$12,000 a year. In outlining his policy regarding the subway, Mayor Harrison said: "While the commissioners will have full swing in regard to engineering problems and questions of technical detail, they will be expected to shape their plans in accordance with the cardinal principles that the city must own and control its subway system or systems for all time."

### Electric Line from Laporte to Peru

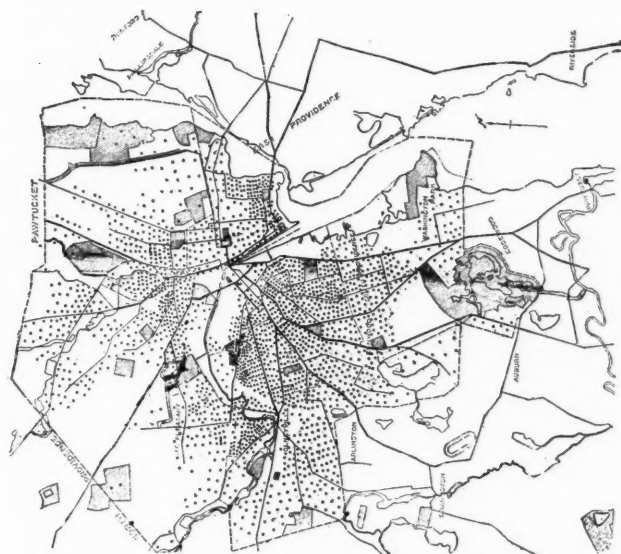
Laporte, Ind.—A representative of an Eastern syndicate has gone over the route of a projected interurban line from Peru to Laporte and will report favorably to the building of a system which will give a straight line from Michigan City to Indianapolis.

### Street Railway Must Pay Rental

Toledo, Ohio.—The ordinance providing that the Toledo Railways & Light Company pay a rental of \$250 per day for the use of the streets on which franchises have expired has been approved by Mayor Whitlock. If the company refuses to pay City Solicitor Schreiber is authorized in the ordinance to file suit compelling the company to pay or oust it from the streets. He presented an ordinance to Council providing for the extension of expired franchises to the life of the longest unexpired franchise on a basis of 3-cent fares and universal transfers. This will present to the street car company the alternative of paying rental or accepting 3-cent fares.

### Report on Providence Street Car Service

Providence, R. I.—Through inadvertence there was omitted last week the illustration which was intended to accompany the news item given under the above heading. This illustration is given herewith and shows the distribution of population of Providence, the traction lines and the parks and rivers and other topographical features. The light lines indicate single track and the heavier lines double track lines



PROVIDENCE, R. I., SHOWING POPULATION AND TRANSIT LINES

of the street railways. The dotted lines are ward lines. Each dot represents 100 persons. A map of this kind is of great assistance in understanding some of the details of the traffic problem, as they are concerned with the movement of population both to their suburban homes and to the parks and other recreation centers.

### Rapid Transit Fire Sprinkler System

New York, N. Y.—The Interborough Rapid Transit Company gave a practical demonstration of its new sprinkler system last week before ex-Fire Chief Croker, Chief Kenlon, the officials of the railroad and their insurance underwriters. The system is the only one of its kind in the country, and was designed by Rathbone Brothers, insurance agents. All along the storage yard are lines of sprinkler pipes connected with a 75,000-gallon gravity tank and also two electric fire pumps. A watchman is stationed in a tower above the yards and commands a view of every car in the yard. At the first sign of fire he can open plugs which will send heavy streams of water playing over the cars where the fire is, and apparatus in the tower also summons the fire department of the yards and the fire boats. To test the system three trains consisting of three cars each were made up side by side and a fire was built in the middle car on the inside track. When the first car and several others were afire the sprinkler system was put in operation and in twelve minutes the fire was under control. It was allowed to blaze up again. The fire department of the yard completely extinguished the blaze in 10 minutes. The representatives of the fire department and the insurance companies expressed their surprise and pleasure at the effectiveness of the system.

## MISCELLANEOUS

### Public Market Wins

Des Moines, Ia.—So great was the success of the municipality of Des Moines as the patron of hucksters and produce vendors when it opened a market place on the City Hall lawn that Mayor James R. Hanna has started negotiations for an additional lot near the city's property. The opening of the market place was the culmination of a long campaign against the grocery store combine. Citizens were eager to avail themselves of the opportunity of obtaining vegetables and farm produce without paying the customary tribute to the middleman. Mayor Hanna said he was elated with the success of the scheme for providing produce to citizens at lower prices than have prevailed in several years. Nearly 50 hucksters were lined up on the lawn and the rush of consumers began at 6 o'clock. By 8 o'clock the hucksters had sold out. New potatoes were bought for 45 cents a peck or \$1.75 a bushel, where formerly the price had been \$3 and \$4 a bushel. Apples, which had been selling at 25 cents a peck, were sold for 10 and 12 cents. Cucumbers found ready buyers at three for 10 cents, against the price of 10 cents each which had been prevailing.

### Fined for Selling Impure Ice Cream

Chicago, Ill.—Ice cream containing 84,000,000 bacteria to the cubic centimeter is being sold in Chicago, according to analyses of samples made by Dr. F. O. Tonney of the municipal laboratories, who testified in the municipal court against a company charged with manufacturing quantities of the product which is impure. A normal number of bacteria in ice cream is 500,000 to the cubic centimeter, according to Dr. Tonney. Municipal Judge Going fined the manufacturer \$100.

### Municipal Telephone System Probable

Chicago, Ill.—Mayor Harrison last week hinted at a municipally owned telephone system and predicted that such a move on the part of the city may be the best one to solve the telephone situation. The Mayor made this statement when apprised of Alderman Herman J. Bauler's plan of purchasing the plant of the Automatic Telephone Company. Alderman Bauler, who is president of the Seventy Cent Gas League and sponsor for the "Penny-a-call" telephone agitation, declared that unless the telephone company granted the penny service or comes to some amicable agreement in the matter before spring he will ask that the question of purchasing the plant of the Automatic Telephone Company be referred to the people in a referendum. The idea of Alderman Bauler is that as a municipally controlled and operated plant the same rates will be granted the people that are now being sought from the company. When told of the alderman's plan Mayor Harrison said that he thought it would be a good one. "Although I am not well acquainted with the plan in detail it may be a good one to solve the telephone situation," he said.

### Municipal Council Orders Dogs Muzzled

Haverhill, Mass.—The dog muzzling order was again passed by the Municipal Council, requiring dogs to be muzzled until Monday, August 28. Alderman Bean read the order and it was unanimously adopted. The former order was effective up to August 1, but the physicians of the city, health officers and others have contended that the danger of rabies was not over, and in consequence of this appeal the Council orders it renewed for another period.

### City Clerks to Organize

Grand Rapids, Mich.—City Clerk Schriver has compiled a letter urging an organization of city clerks, similar to that of the county clerks, and has prepared a form which he will send out to the 106 clerks of the incorporated cities of the State asking them to meet at this city during the fall to form a preliminary organization. "There is much the clerks could do in the way of influencing legislation with a view of getting more uniform laws," said Schriver. "I think there is a vast field of usefulness for such an organization and hope to see it formed." No date for the meeting has yet been set. Mr. Schriver will determine on the date for the call when he hears from some of the clerks and has an expression of their opinion as to the best time.



### Finest Park to Be Laid Out

New England, N. D.—At a mass meeting of the business men held in the City Hall it was voted on and carried unanimously that they proceed to make the necessary arrangements for an up-to-date park and it was estimated that the cost of the same would be in the neighborhood of \$2,500, which amount would be provided by the village. A special election will be held soon to vote on the question of issuing bonds for park purposes as well as a more satisfactory fire protection and other purposes. A place is to be provided for a ball park, tennis courts, etc., roadways laid out and something like 1,800 trees planted. Mr. Burns, a representative of the Clinton Falls Nursery people, was present and again made his proposition to furnish the trees, superintend the planting, etc., and guarantee each one to grow or replace them inside of three years. The trees will be from six to eight feet in height. A dam is to be placed across the river and the water made to back up and raise several feet which would provide water suitable for boating, bathing, etc. This step has not been taken hastily, as committees have been appointed by the Commercial Club to go into the matter in detail, which they have done. There is no method of estimating the value of a park of this kind to the town, as it will be one of the finest in the State.

### Time of Dredging Considered Above Cost

Los Angeles, Cal.—That there will be no unavoidable delay in dredging the harbor was made evident when the board of harbor improvement recommended the acceptance of the bid of the Standard American Dredging Company to do the dredging in the Wilmington basin and make the fill-in proposed in Wilmington in eight months, the shortest time proposed, at 21½ cents a cubic yard. The work would have been done for 1 cent a yard less had 12 months been allowed for it, or for 2 cents a yard less had 17 months been allowed for it, but the board figured that the revenue which would be derived from the municipal wharves and the benefit to shipping and to Wilmington would be sufficient to warrant paying the higher rate and getting the work done sooner. This recommendation goes to the board of public works, under which the harbor bond money will be spent.

### Open Competition Plan Profitable

Clinton, Ia.—That those have been correct who for the past dozen years demanded that county bridge contracts be let at public competition has been fully demonstrated by a comparison of county bridge prices paid this year with prices for similar structures built without competition a year ago. The present board of supervisors is entitled to credit for having changed the plan of "no competition" to one of open competition by which the county has saved on its bridges built so far this year the enormous sum of \$34,470.80, and has built for an expenditure of but \$26,129.20 bridges which under last year's plan would have cost \$60,600. Mr. Hart shows that concrete in place has this year under competition cost the county from \$7 to \$9 a cubic yard, while last year the county was paying from \$19.50 to \$30 a cubic yard for this work. A similar saving has also been made in the wooden bridges.

### Want Municipal Lighting System

Burlington, N. J.—The campaign for municipal ownership of the city's street electric lighting system has been reopened in City Council. Councilman Charles M. Scholey had a resolution passed calling for a special election to decide on a municipal plant. Scholey has been leading the fight against alleged exorbitant rates and poor service since the local plant passed under the control of the Public Service Corporation. Councilman Scholey and business men who are backing him maintain the city can save taxpayers from \$5,000 to \$7,000 a year by operating its own plant, at the same time more than doubling the present street illumination.

### Madison Purchased Park

Madison, Wis.—The City of Madison has bought the Monona Lake assembly grounds and will use it as a city park. The consideration was \$40,000. The street car line is to be extended to the main entrance of the grounds. This is a beautiful park with several hundred feet of shore line.

### Urges Censorship for Moving Picture Films

Boston, Mass.—Charles M. Bowman, common councilman from the Fifth Ward, has drafted an ordinance asking that public censors be appointed to approve all moving picture films before the pictures can be shown in this city. He has taken this action because he believes that the greatest percentage of juvenile crime committed in this city and county is through dangerous melodramatic moving pictures, which leave a deep impression on the imaginative mind of the youth and even on the minds of older men, as in the case of the two young men who held up a street car last summer. The judges of the juvenile court in this county, as in others where moving picture shows exist, find that the moving picture is a more formidable cause of crime to-day than was the dime novel in days gone by. The frequency with which habitual youthful criminals are arrested and blame their depravity on moving pictures presents a great problem to the child psychologist and those who have to deal with the child problem generally. One of the judges declared recently that such an ordinance should be passed, and it will no doubt meet with the approval of the public. A number of councilmen, when interviewed, declared that they were in favor of it.

### Can't Rent Space Under Sidewalks

Spokane, Wash.—In an exhaustive written opinion to the city commissioners Corporation Counsel A. M. Craven holds that the city can legally use the sub-sidewalk space throughout the business district for pipes, wires or conduits, but that if the space is not needed for these public purposes no rental can be charged property owners who use it for vaults, coalbins and storage places. Attorney Craven declares that the city has no title in fee to the streets, which are in this State the property of the abutting owners, but has only an easement over them for the primary purpose of public travel and the secondary purpose of pole lines, water and sewer mains, conduits, etc. It is further held that the city may properly demand to pass on the plans made by property owners to use the space, but that permission cannot be withheld from property owners to use it unless such use interferes with the exercise of the city's easement over the street. Any permit issued after plans are passed upon, it is declared, does not constitute a legal license, and the property owner at any time can be required to give up the sub-sidewalk space for public uses.

### Warned Not to Violate Traffic Ordinance

Barberton, Ohio.—Police are soon to start a war on persons who continue to violate the traffic ordinances. Warnings were issued by various patrolmen to wagon drivers, those delivering ice in particular, that their wagons will not be allowed to stand on the wrong side of the street. Police claim that they have warned the drivers of these wagons many times and but little attention has been given the violation. The drivers claim that it is too hard for them to carry the ice across the street and that this is the reason they drive the wagons to the opposite curb. Police say that arrests will follow if the orders are not carried out.

### Park as Temporary Picnic Grounds

Cincinnati, Ohio.—Another large park tract has been added to the park system of the city by the park commission, when the Blachly farm, lying between Avondale and Bond Hill, was purchased for \$82,500. The property lies on both sides of Paddock road, extending east as far as Reading road, and contains 114.18 acres, making the purchase price \$722 an acre. The purchase was made from the Blachly Farm Realty Company. The tract is well wooded and has large open fields, and the intention is for the present to leave it in its natural condition without improvement as a picnic ground for the people. The proposed Bloody Run parkway will connect with the new park at its northern terminus at Sherman avenue. This, it is declared, will be the last large tract of property lying in the outskirts of the city to be purchased by the park commission out of its present bond fund. The purchases have been made with the idea of securing the property while it could be acquired at a reasonable price. The Board also determined to start condemnation proceedings for property wanted for playgrounds at Western and McClean avenue and Bank street.



## LEGAL NEWS

## A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

## Sewer Assessment—Railroad Property

Lehigh Valley Railroad Company of New Jersey et al. vs. Mayor, etc., of Jersey City et al.—A railroad company had its right of way through a marshy district, and also owned certain lots therein which it used for railroad purposes. Its tracks were upon high trestles. A sewer was put through the marsh. Held that, as to the right of way, the railroad was not liable for any assessment, having received no benefit, but as to the other property, if not used for railroad purposes it was liable to assessments the same as any other property, but if used it was liable only to the amount of the benefits.—Supreme Court of New Jersey, 80 A. R., 228.

## Failure to Repair Sewer—Liability

Butte Machinery Company vs. City of Butte.—Revised Codes, section 3289, requiring notice before any city or town shall be liable for damages for any loss or injury occasioned by any defect in any bridge, culvert, or public work of any kind, applies to injuries both to the person and to property; and hence a plaintiff cannot, without notice, recover for injuries to his property occasioned by the municipality's failure to repair a sewer.—Supreme Court of Montana, 116 P. R., 357.

## Defective Sidewalk—Notice

Owen vs. City of Seattle.—A city is not chargeable with notice of a defect in a sidewalk merely because a subordinate employee having no supervision of the streets may have known of it.—Supreme Court of Washington, 116 P. R., 261.

## Personal Injury—Failure to File Notice

Cole vs. City of Seattle.—Failure of an injured pedestrian to file a verified claim within 30 days after the injury, as required by Seattle Charter, article 4, section 29, is not excusable because a street foreman said he would report the matter to the Council and advise settlement, nor because the pedestrian's letter to the President of the Council, making a claim, remained unanswered and unobjected to, either as to form or contents, although Ordinance No. 4187 requires officers and employees to report claims against the city.—Supreme Court of Washington, 116 P. R., 257.

## Defective Streets—Injuries to Pedestrians

Suchovalsky vs. City of New York.—A pedestrian on a street in such bad condition that it is difficult to cross, who does not notice where he is, and who walks straight ahead without looking where he is going, is guilty, as a matter of law, of contributory negligence, precluding a recovery for injuries by falling into an excavation in the street.—Supreme Court of New York, 130 N. Y. S., 112.

## Defective Sidewalk—Negligence

Gilliland vs. City of Omaha.—The existence of a step of about eight inches at the intersection of a crosswalk which was safe and in good repair with a sidewalk, which was also in good condition, does not of itself constitute actionable negligence. A city is not liable to one who is familiar with the crossing, and who on a rainy evening, on account of the wet and slippery condition of a sound crosswalk, slipped in stepping a distance of about eight inches from the crosswalk to an intersecting sidewalk, which was also in good repair.—Supreme Court of Nebraska.

## Action for Injuries

Diel vs. City of Ferguson.—Where plaintiff in an action for personal injuries alleged to have been caused by a defect in a plank sidewalk alleged and offered evidence to show the particular place of the defect, the admission in evidence of photographs covering a distance of 800 or 1,000 feet, but showing the particular place averred, and where the jury had been instructed to find that the accident occurred at the place specified, is proper.—St. Louis (Mo.) Court of Appeals, 138 S. W. R., 545.

## Street Obstructions and Encroachment

Agurs vs. McKellar, Street Commissioner.—Shreveport City Charter as amended by act No. 283 of 1908, authorizes the city to determine the completion and dimensions of the pavement of streets; to prevent any encroachments or obstructions of the streets and alleys and public roads and to order any object, whatever its value, which may encumber such place, to be torn down and removed or sold for whom it may concern, in the same manner and after such notice as shall be required by such regulations. Held, that such provision conferred two separate powers—one to prevent future encroachments on or obstructions in streets which the city might prevent by general regulations enforceable by the Street Commissioner, and the other to order to be torn down and removed any object which might encumber a street, the exercise of which involved discretion and judgment which could not be delegated, but must be exercised by the City Council in each case.—Supreme Court of Louisiana, 55 S. R., 758.

## Assessment—Appeal

Hill et al. vs. City of Waterbury.—Where on appeal from assessments for street improvements the court, after full hearing, found on proper evidence that one of the assessments was excessive and reduced the same, and that two others were not, such finding would not be reversed on further appeal.—Supreme Court of Errors of Connecticut, 80 A. R., 202.

## Assessments—Repaving

Citizens' Association vs. City of Bridgeport.—The liability of abutting property owners to assessment for the improvement of a street is not limited to its original construction, but the cost of repaving, when necessary to keep the street in proper condition, may also be assessed against them as special benefits.—Supreme Court of Errors of Connecticut, 80 A. R., 203.

## Special Assessment—Due Process of Law

Lanham & Sons Co. vs. City of Rome et al.—Where a municipal charter authorized the paving of streets and the assessment of a specified portion of the cost thereof upon lots abutting upon them, required notice to be given to the owners of such lots, and provided a method by which such owners should have an opportunity to question and have a judicial determination as to the validity and amount of such assessments in proceedings for their collection, this satisfied the constitutional requirement of due process of law.—Supreme Court of Georgia, 71 S. E. R., 770.

## Legalizing Invalid Acts of Officers

People ex rel. Dady vs. Prendergast, City Comptroller.—Under Constitution prohibiting any municipality from incurring any indebtedness except for municipal purposes, the Legislature may not legalize claims against a city which are invalid or void because they do not arise from the performance of a municipal purpose, but a claim for work constituting a city purpose which cannot be enforced at law against the city, because of failure to follow statutory requirements, is simply without legal force, and may be legalized.—Supreme Court of New York, 128 N. Y. S., 1082.

## Telegraphs and Telephones—Rights in Streets—"Post Roads"

Western Union Telegraph Co. vs. Hopkins, County Assessor.—Under Revised Statutes, U. S., Section 3964 (U. S. Comp. Statutes, 1901, page 2708), declaring that all letter carrier routes established in any city for the collection and delivery of mail shall be post roads, and Code Civil Procedure, Section 1875, Subdivision 3, requiring the courts to take judicial notice of acts of the executive departments of the United States, the streets of a city kept up and maintained as such are letter carrier routes established in the city for the collection and delivery of mail, and are post roads; and a telegraph company maintaining telegraph lines on the terms imposed by Act of Congress, July 24, 1866, Chapter 230, 14 Statute 221, empowering any telegraph company accepting the obligations of the act to construct, maintain and operate telegraph lines over any military or post roads of the United States, has such right to the streets of a city, constituting post roads, as are granted by the act, and such rights constitute a federal franchise.

## MUNICIPAL APPLIANCES

### Sanitary Furnace

THE William H. McGuire Company, Hobart, Okla., has placed on the market a garbage and refuse incinerator, one of the installations of which is shown in the illustrations. The incinerator is a comparatively simple brick furnace lined with fire brick, provided with suitable housing, charging platform, etc. These furnaces have been installed in a number of cities in the Southwest and according to letters from health officers in charge of the incinerators work satisfactorily and are not considered as nuisances where erected. The health officers, quoted in pamphlets published by the company, speak favorably of the capacity of the incinerators to consume night soil.



McGUIRE GARBAGE INCINERATOR

### Electric Rock Drill

THE Fort Wayne electric rock drill is the development of five years of experiment and testing under the supervision of experienced mechanical engineers by the Rock Drill Department, Madison, Wis., of the Fort Wayne Electric Works. The drill, called Type A, is of the rotary hammer design operated by an electric motor which is mounted on the frame of the drill proper. The field for these drills is particularly in places where power may be purchased from electric transmission companies at a low cost, eliminating the expensive steam and air-pressure plants usually required. The drill is stated to require about  $1\frac{1}{2}$  to 2 horsepower for its operation, including loss in transmission from source of power to the drill. An air drill of equal capacity is said to require 12 to 18 horsepower. The good performances of this drill during 1910 induced the company this year to install a large amount of special machinery to manufacture the drills so that all parts are interchangeable. The mechanism of the drill consists of two parts—a revolving helve containing the hammers and the chuck mechanism for holding and rotating the drill steel. A flexible belt connection between the motor and

drill permits a variation of speed to any degree desired, with the result that the advantages of hand drilling are obtained without the disadvantages usually incident to machine drilling. The drill and motor are of a simple and rugged design, free from springs, solenoids or other devices that complicate and make the cost of maintenance excessive.

The drill mechanism is totally enclosed within a heavy cast steel casing which protects the working parts from any foreign substance, and is claimed to be of sufficient strength to withstand any strains incident to the extreme hard usage to which a drill is subjected in actual service.

Within a revolving helve are two chambers, in each of which a hammer consisting of a solid block of special steel, floats freely. As the helve revolves the hammer is thrown outward by centrifugal force and at each revolution strikes a blow upon the projecting head of the drill steel cap which delivers the energy of the blow to the drill. After delivering the blow the hammer rebounds into the chamber within the helve, where it is completely cushioned upon air which it traps. During the period of recoil of the hammer (the helve continuing to revolve) the hammer passes the projecting drill steel cap. The hammer is again thrown into the striking position by centrifugal force, during the remaining portion of the complete revolution of the helve.

The chuck consists of two parts—the chuck and the drill steel cap. The chuck is a steel sleeve through which the "shank" of the drill steel passes, and is designed to hold the drill steel in position to receive the hammer blow as well as transmit a rotary motion to it. The hammer blow is delivered to the drill steel cap, which in turn transmits it to the drill steel.

The rotation of the drill steel is effected by means of a heavy worm gear reduction driven from the helve shaft. A rugged slip friction cone is mounted on the worm gear shaft and serves to protect the gears from undue strain in case of sudden sticking of the drill steel.

The functions of the buffer plates are to hold the drill steel in the chuck and to absorb the blow from the hammer when the drill steel is not striking rock or is being backed out of a deep hole in

broken or uneven ground. No wrenches or special tools are required to change the drill steel. All that is necessary is to remove the heavy cotter pin and strike the swinging buffer plate an upward blow.

The rotating parts of the drill and motor are provided with heavy roller or ball bearings of special design, grease packed, so that they require no attention from the operator for a period of thirty to sixty days. Roller bearings are used in the drill and ball bearings in the motor. All the bearings used are designed for extra heavy duty and were not adopted until tests covering a period of over a year had demonstrated their ability to stand up under and absorb any shock due to the operation of the drill.

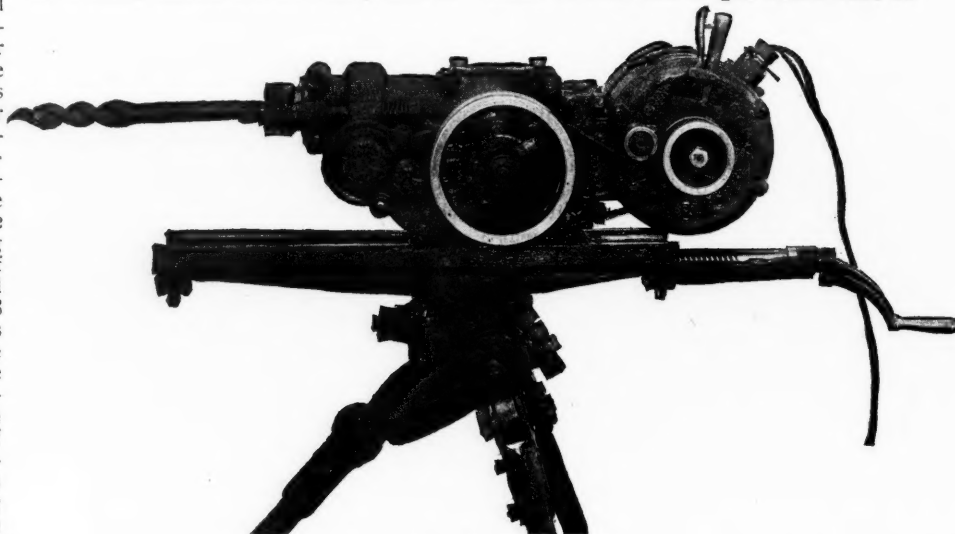
The motor is fully enclosed and splashproof, capable of successful operation in wet places, and reinforced throughout with particular reference to the requirements of rock drill service. The motor can be quickly connected to the line by means of connector plugs of such design that it is impossible for the most inexperienced operator to make improper connections. All motors are tested to withstand 100 per cent. overload, and provision has been made in the drill design whereby a load in excess of this amount cannot be thrown upon the motor. Drills are equipped with either 110 or 220 volt motors, designed for direct or alternating current circuits. If alternating current motors are required same can be furnished for three-phase circuits of 25 or 60 cycles.

The Type A drill is designed for use on tripod, column, shaft bar or quarry bar.

### Drying Sewage Sludge

THERE is being used in at least two cities—Bradford, England, and Dublin, Ireland—a rotary drier of American type for drying sewage sludge cake and preparing it for sale as fertilizer. This drier, which is manufactured by the Ruggles-Coles Engineering Company, receives at Bradford sewage sludge containing about 33 per cent of water and delivers it in the form of dry round pellets of about the size of peas containing 8 to 10 per cent of water. It is said to be dry enough to be readily shipped in bags, inoffensive and readily ground to a powder. During the drying it is heated for about 20 minutes to a little over 212 degrees F., and is therefore sterilized.

A 96-hour test showed a fuel composition of 111.2 lbs. of gas house coke of



FORT WAYNE ELECTRIC ROCK DRILL



10,550 B.t.u. calorific value per short ton of dried material, a calorific efficiency of 73.7 per cent and a total cost for fuel of 12.9 cents per ton of dried material.

In Bradford the dried material finds a ready sale at \$2.17 a ton. It previously cost \$1.21 per ton to dispose of the sludge cake. The fuel and labor for the drier cost \$12.94 a day, the average output being 38.4 tons of dried material.

#### Rickman Sewer Pipe Bend Machine

R. L. RICKMAN, Eau Claire, Wis., has placed on the market a machine for making sewer pipe bends, which he invented, almost as a matter of necessity in connection with a contract for laying a large amount of cement pipe sewers where many bends were required. At that time he found that he would have to ask the consent of the City Council to use clay pipe at the bends and pay a high price for them or devise some way of manufacturing them himself. The machine shown in the illustration is the solution he found to the problem.

The method of operating the machine is as follows: To begin with, the operator raises the hopper, which is held in an elevated position by the "drop latch"; he then places the mould on the bed-plate and lowers the hopper, letting the mould pass through the opening in same, care being taken that the mould sets "square" and is not "twisted" either to the right or left. He then throws back the hand lever, which brings the bend-core into position, which is held fast by the "lock latch" attached to the foot lever.

He then puts a shovel or two of material on the hopper and proceeds to tamp the material in with the tamper. When he has filled the mould up to a little above the shoulder of the bell, he then sets the bell core in position, tapping it down until it is level with the top of the mould. He then tamps the material solidly around the bell core and strikes off level.

He then removes the bell core, places one foot on the lock latch and one hand on the lever, and by pulling forward on the lever and pressing down on the lock latch it is released and the core is easily withdrawn.

The operator then places one hand on the mould and with the other raises the hopper up until caught by the drop latch; he then removes the mould, turning it upside down, and sets it on a wooden pallet and removes the mould, leaving the bend on the pallet and returns the mould to the machine for another operation.

In constructing this machine, "rapidity" and "durability" have been kept in view. For instance: The mould has been made of cast aluminum so as to make it durable and

light to handle. The core is of polished cast iron, the hopper of steel plate and all placed on a cast iron frame to insure rigidity.

The manufacturer states that one operator should make from 75 to 100 bends per day, and that one cubic yard of material will make about 250 4-inch and 160 6-inch bends.

#### Morse Destructor Furnace

THIS is a modern destructor for the disposal of refuse and waste of laboratories, hospitals, asylums, sanitariums, hotels, public institutions, etc. It is built in many sizes and varied constructions to meet the demand for combustion of every class of refuse matter. There are certain essential principles involved that are always embodied in every destructor, but the manner of including these, and their application to the particular purpose required is in each case the subject of special study and design. Some of the advantages claimed for this destructor may be noted:

(1) This is a destructor that develops and maintains the high temperature necessary to dissociate and destroy the gaseous compounds thrown off from burning animal and vegetable matter.

(2) The construction of the destructor and the arrangement of the accessories are made to conform to the particular conditions of each case.

(3) The convenient charging of material, introduction and regulation of air supply, maintenance of uniform temperature, and removal of residuals are points of special advantage.

(4) The special arrangement of heavy grates for drying and burning surfaces, and the elimination of all forms of fire brick arched drying hearths that become saturated with moisture and rapidly disintegrate, requiring constant replacement.

(5) In this destructor the application of forced draft for obtaining a higher temperature and more rapid combustion has, for the first time in the

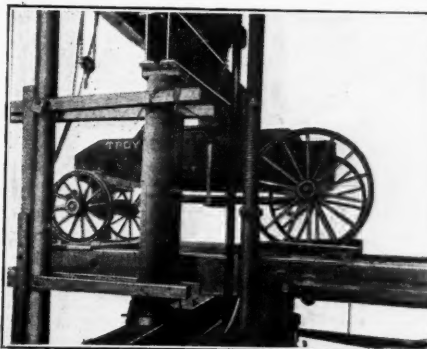
smaller furnace constructions, been employed with remarkably successful results.

(6) A high rate of combustion of material per square foot of grate surface, and the greatest evaporation of water for steam purposes, in American practice, has been demonstrated by this destructor.

The Morse destructor is manufactured by the Griscom-Spencer Company, New York City.

#### Troy Dumping Wagon Test

A Troy bottom-dump wagon, No. 5½, taken out of stock, has been tested in the laboratory of Purdue University to ascertain the breaking load, resistance of rear wheel against strain on a side hill and against that due to turning out of a rut; also the strength of the rear axle. The wagon tested was rated at a capacity of 8,500 pounds. It actually carried 72,500 pounds, which was applied to the body of the wagon. The body was filled with sand and the load transmitted through this so as to be applied to the bottom of the body. This gave a factor of safety of 8.53 in. carrying capacity. Wheels, axles and bolsters showed no signs of failure. The bottom of the box sagged 4.37 inches, but did not leak sand. The dumping mechanism worked after the test, and dumped the load. The springs were uninjured.

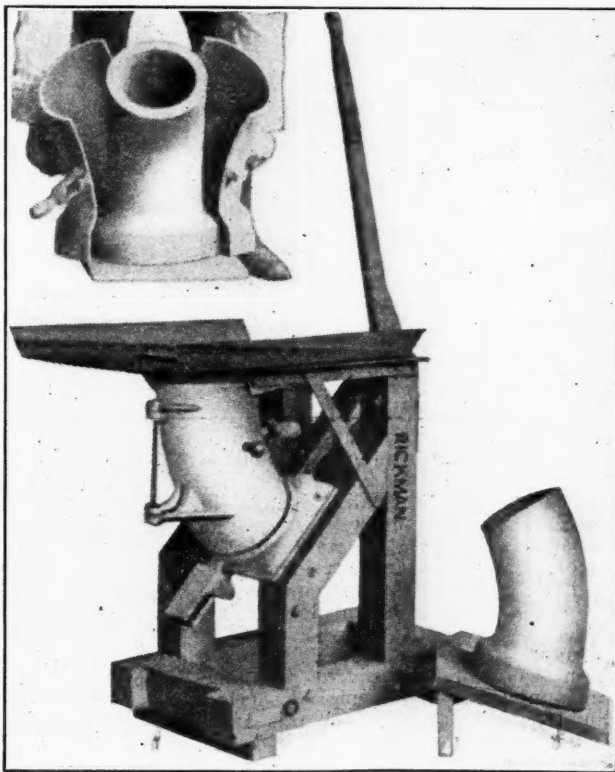


SIDE VIEW OF WAGON UNDER TEST

In another test the wagon was placed loaded on such a slope that it was just ready to tip over—31° with the horizontal—and the load of 2.05 times the rated capacity applied before the wheel failed. A test of the wheel giving a strain similar to that due to turning out of a solid rut, such as a car track, showed a factor of safety of 1.72, as compared to the maximum pull which could probably be exerted by a pair of the strongest draft horses—a condition which would probably never be equaled in practice. In testing it for strength the rear axle carried a load of 20,000 pounds before taking any initial set whatever and 31,000 before failure.

#### Air Cylinders for Pyramid Pumps

To enable its Pyramid double-acting piston pump to be used for pneumatic water system pumping, the Goulds Mfg. Company, Seneca Falls, N. Y., is placing on the market a special air cylinder that is intended to be attached to the 3 x 5 and 4 x 5 in. sizes to do away with the necessity of a separate pump for maintaining the air pressure required by these systems to force the water from the storage tank through the distribution piping. The cylinder is designed to withstand a pressure of 75 lbs. per square inch. When pressure is not required the pump is relieved of all pressure by opening an air cock, which prevents the air from entering the tank.



SEWER PIPE BEND MACHINE



## NEWS OF THE SOCIETIES

**League of Cities of the Third Class of Pennsylvania.**—The annual convention of the League will be held this year in the city of Easton the last week of August. Local city officials have received notice from those of Easton that preparations are being made for the entertainment of a large number of delegates and a programme of important subjects is being arranged for discussion. This will be the first time the convention has been held in the extreme eastern section of the State, and an effort will be made to interest the officials of the Eastern cities in the work of the League, with a view of broadening the influence of the organization. Heretofore not more than a dozen of the 30 or more cities of the third class have taken part in the conventions and the work that comes before the Legislature every two years, and it is hoped to get them all interested so that a more formidable front can be presented to the State lawmakers, thereby getting what is desired in the way of legislation. One of the subjects that will again be considered by the convention will be that of commission government. The subject was considered last year at York, but no definite stand was taken and it will come up again. The everlasting paving question will also be considered.

**Ohio State Firemen's Convention.**—The annual convention of the Ohio Firemen's Association was held at the Breakers Hotel, Cedar Point, Sandusky, O., beginning August 1. Addresses were given by State Fire Marshal J. W. Zuber, of Columbus, whose subject was "Compulsory Dismantling of Dilapidated Buildings"; Chief Wallace, of Cleveland, discussed "The High Pressure System"; John W. Kerns, State Inspector of Workshops and Factories, Columbus; Chief William Mayo, of Toledo; Chief George Hume, of Sidney; Chief John Mertz, of Akron; R. S. Tucker, of the Ohio Inspection Bureau; J. A. Welsh, of Columbus; A. C. Speed, of the Ohio Fire Prevention Association, of Columbus; Chief W. H. Loller, of Youngstown; Chief George Knofflock, of Mansfield, and Chief J. Fitton, of Bellaire, were among the speakers.

**Pennsylvania State Firemen's Convention.**—The Pennsylvania State Firemen's convention will be held in York during the first week in September. Already 74 Chiefs have accepted invitations to participate in the parade. The Keystone Fire Chiefs' Association will be represented by 75 men in regulation uniform. A meeting of the association will be held on Wednesday night of the convention week. James C. Baxter, Chief of the Philadelphia Fire Department, is president of the association.

**Interstate Good Roads Conference.**—This conference met at Mountain Lake Park, Md., July 28. Managing Director Dawe, of the Southern Commercial Congress, reviewed the good roads efforts in the Southern States. Alabama was praised for its five-year campaign to secure a State Highway Commission.

Arkansas was commended for having now formed a State good roads and drainage association to prepare a general road law, which the State still lacks.

Florida was commented on for its country roads, made of brick, and a recent tour to work up sentiment for a good roads association.

Georgia was praised for its convict work on the roads, 4,714 being at work over 111 counties; and for its proposed law for a State Highway Commission.

Kentucky was referred to for its great pike systems of crushed rock.

Louisiana came in for great praise because of the sudden change from indifference to activity under the efforts of Governor Sanders.

Mississippi was shown to be preparing a great and worthy campaign.

Missouri was commended as moving toward State aid, particularly as applied to great trunk lines proposed.

North Carolina was shown to be up to the minute and ahead on its central highway plans.

Oklahoma was shown to have an especially heavy problem since every section line is by law a public road.

South Carolina was shown to lead in the use of sand-clay mixtures and cheap construction.

Tennessee, with its daring plans for main lines of travel east and west, and for inter-mountain scenery, was highly praised.

Texas and its problems were referred to as being dealt with in a brave way, there being 140,000 miles of road to handle.

Virginia was especially commended for its progress in bridge building and the influence of the State Highway Commission.

**La Salle County (Ill.) Good Roads Convention.**—The president of the National Good Roads Congress, Arthur C. Jackson, who is also president of the Illinois State Good Roads Association, arranged with the citizens of Ottawa to hold a La Salle County good roads convention August 11 and 12 to organize a county association. This is but part of a movement to form county or other local associations throughout the different States. The National Good Roads Association assumed the responsibility, both financial and other.

**American Association of Park Superintendents.**—With more than a hundred delegates present from all parts of the Nation, the thirteenth annual convention of the American Association of Park Superintendents opened in Kansas City, Mo., August 8. William J. Zartman, Superintendent of Parks in Brooklyn, N. Y., and president of the association, was the principal speaker at the afternoon's session. Other prominent park superintendents attending the convention were: Dr. Frank Baker, Superintendent of the Zoological Park, Washington, D. C.; Frederick C. Steinhauer, Superintendent of Parks in Denver; Charles E. Keith, Bridgeport, Conn.; W. A. Adams, Omaha, and J. W. Thompson, Seattle.

**Western Pennsylvania Firemen's Association.**—With more than 900 firemen present, the twelfth annual convention of the Western Pennsylvania Firemen's Association was formally opened in Trainer Hall, Monongahela, August 8. The address of welcome was made by Mayor L. T. Esler, and President Cunningham, of the Western Pennsylvania Firemen's Association made the response.

Mayor Esler gave the delegates a warm welcome. President Cunningham announced that memorial services would be held at 2 o'clock this afternoon for the members who had died during the past year. The principal address at these services was made by Attorney R. W. Irwin, of Washington.

**Preble County Good Roads Association.**—The third quarterly meeting of the Preble County Good Roads Association, held in the court house, Eaton, O., on August 8, was largely attended and in point of interest was one of the best meetings ever held. "The Net Results," by President Charles W. Bloom, of New Paris, was an interesting paper dealing with the work accomplished thus far by the association in Preble County. In it he also told of the broadness of its scope and what remains yet to be done. "The Relation of Gravel and Crushed Stone, as Used in This County," brought out an interesting discussion, participated in by a number of attendants.

**International Association of Municipal Electricians.**—On account of the recent death of the late Stanley W. Manning, Superintendent of Fire Alarm of St. Paul, Minn., who was also chairman of the executive committee of the International Association of Municipal Electricians, the executive committee has found it necessary to change the city for the convention for 1911. It will now be held at Atlantic City, N. J., September 12-15, with headquarters at Young's Hotel, instead of at St. Paul, as announced. Mr. Manning was accidentally electrocuted on July 18 at the State Fair Grounds in the city of St. Paul.

## Calendar of Meetings

- August 15-18.  
**Firemen's Association of the State of New York.**—Rochester, N. Y.—Thos. Honohan, Secretary, Frankfort, N. Y.
- August 16.  
**North Carolina Association of County Commissioners.**—Annual Convention, Asheville, N. C.—D. McEachem, Vice-President, Wilmington, N. C.
- August 16-18.  
**Iowa County Auditors Association.**—Convention, Mason City, Ia.—C. W. Duke, Secretary, Clarinda, Ia.
- August 17.  
**New England League of Veteran Firemen's Associations.**—Annual Muster, New Bedford, Mass.—Wm. H. Rankin, Secretary, New Bedford, Mass.
- August 23-25.  
**Virginia State Firemen's Association.**—Convention and Tournament, Newport News.
- August 29-31.  
**American Bar Association.**—Annual Convention, Boston, Mass.—Chas. R. Atherton, Secretary, Neave Building, Cincinnati, O.
- September 4-6.  
**Montana State Firemen's Association.**—Annual Convention, Billings.—E. M. Nelson, vice-president, Billings, Mont.
- September 5-6.  
**Seven County Volunteer Firemen's Association.**—Annual Convention, Corning, N. Y.—P. E. Decker, Secretary, Athens, N. Y.
- September 5-8.  
**Pennsylvania State Firemen.**—Annual Convention, York, Pa.—James C. Baxter, Chief of Fire Dept., Philadelphia, President.
- September 11-14.  
**Pacific Coast Association of Fire Chiefs.**—Nineteenth Annual Convention, Vancouver, B. C.
- September 12-15.  
**International Association of Municipal Electricians.**—Annual Convention, Youngs Hotel, Atlantic City, N. J.—Clarence R. George, Secretary, Houston, Tex.
- September 14-15.  
**New Jersey State Firemen's Association.**—Annual Convention, Atlantic City, N. J.—Wm. Exall, Secretary, 86 Bruce street, Newark, N. J.
- September 14-15.  
**League of Virginia Municipalities.**—Annual Meeting, Cape Charles.—L. C. Brinson, Secretary, 515 Henry Street, Portsmouth, Va.
- September 18-30.  
**International Municipal Congress and Exposition.**—Chicago, Ill.—Curb M. Treab, Secretary, Great Northern Building, Chicago, Ill.
- September 18-October 1.  
**Fourth International Good Roads Congress.**—Chicago, Ill.—J. A. Rountree, Secretary, Birmingham, Ala.

**September 19-22.**  
**International Association of Fire Engineers.**—Annual Convention, The Auditorium, Milwaukee, Wis.—James McFall, Secretary, Roanoke, Va.

**September 19-23.**  
**American Hospital Association.**—New York City. J. N. E. Brown, M.D., Secretary, Toronto General Hospital, Can.

**September 19-22.**  
**American Association of Public Accountants.**—Annual Convention, San Francisco, Cal.—T. Cullen Roberts, Secretary, 56 Pine street, New York, N. Y.

**September 24-30.**  
**International Congress on Tuberculosis.**—Rome, Italy.—Professor Ascoli, Secretary-General, Via Lucina, Rome, Italy.

**September 25-27.**  
**National Firemen's Association.**—Annual Convention, St. Louis, Mo. Capt. Bert Fisher, Secretary, 1252 East Forty-sixth street, Chicago, Ill.

**September 26-29.**  
**American Society of Municipal Improvements.**—Grand Rapids, Mich.—A. Prescott Folwell, Secretary, 239 West Thirty-ninth street, New York City.

**November 20-24.**  
**American Association for Highway Improvement.**—First Annual Convention, Richmond, Va.—Logan Waller Page, President, United States Office of Public Roads, Washington, D. C.

## PERSONALS

BLANEY, CHAS. D., Burton A. Towne and N. D. Darlington have been appointed members of consulting board in connection with California State highways.

BRADY, ALDERMAN P. H., has been elected President of the Common Council, to succeed Hugh Lavery, resigned.

DAVIDSON, C. S., Newark, O., Manager and Illuminating Engineer of the Street Lighting Department of the Holophane Company, has resigned his position. After August 15 he will join W. G. A. Reid, of Detroit, Mich., an interest in whose business he has purchased. The firm does a business as manufacturers' agents. Mr. Davidson's previous experience has been along the electrical line.

FUGITT, DON C., Los Angeles, Cal., has begun duties as the first Park Warden; as executive officer of the Harbor Commission at the port he is virtually Master of the Harbor.

GERRY, WM. F., Lynnfield Center, Mass., has been appointed Fire Chief by Board of Selectmen.

HOWELL, WM. W., Poughkeepsie, N. Y., has resigned as Superintendent of City Parks to accept position as superintendent of estate of Clarence Kenyon, New York millionaire.

HYDE, JAMES FRANKLIN, Pierre, S. D., City Treasurer, died Aug. 5, age 96 years. He was the oldest city official in the United States.

KENLON, JOHN, acting Chief of the New York Fire Department, has been appointed Chief as the result of a civil service examination. The contest was a very close one, Kenlon receiving a mark of 85.08 per cent, Joseph F. Martin 84.79, William Guerin 84.20, and W. T. Largfield 82.12. The appointment of Kenlon was announced at Fire Headquarters at a ceremony to which a large number of guests had been invited. At the same time announcement of 108 appointments and promotions were made.

KNOFFLOCK, GEORGE, Mansfield, O., Fire Chief, fell down an elevator shaft and was seriously injured while fighting a fire at the plant of the National Biscuit Company.

MANNING, STANLEY W., late Superintendent of Fire Alarm of St. Paul, Minn., and chairman of the executive committee of the International Association of Municipal Electricians, was killed by electric shock at the State Fair Grounds July 18.

MARTEN, ALBERT S., Newark, N. J., after many years of active service, has retired from the presidency of the Newark Tea Tray Co.; G. A. Kruttschnitt, former president of Aluminum Goods Mfg. Co., succeeds him.

MORRIS, IRVING J., Albany, N. Y., has resigned as Secretary of State Highway Commission. Mr. Morris' retirement is voluntary. He will engage in business for himself in Albany.

MUDD, DR. W. G., Denver, Col., has been appointed regular Police Surgeon by the Fire and Police Board.

O'NEILL, NORMAN, Taunton, Mass., after 22 years' service as Clerk of Municipal Lighting Department, has presented his resignation to accept a flattering offer from Stone & Webster Management Association, the principal electrical concern of its kind in the country.

PARKS, B. F., Cloquet, Minn., has been appointed City Clerk, to fill the unexpired term of the late J. A. Granier, who died July 28.

KEEL, C. G., Kingston, N. Y., has been appointed First Deputy in New York State Highway Department.

RIPLEY, JOSEPH, Albany, N. Y., and Mortimer G. Barnes, New York City, have been named by State Engineer Bessel as Consulting Engineers in State Barge Canal construction. Both have served on the Advisory Board of Engineers for State Canals.

RODDEY, JOHN T., Mayor of Rockhill, S. C., has announced that he will resign the office in the near future.

TUCKER, DR. FRED A., Noblesville, Ind., has been elected President of State Board of Health. Dr. T. Henry Davis, Richmond, Ind., is vice-president.

WILLIAMS, GARDNER S., Consulting Engineer, Ann Arbor, Mich., has been retained by the city to appraise the property of the Ann Arbor Water Co., which the municipality contemplates buying.

## INDUSTRIAL NEWS

**Cast Iron Pipe.**—Chicago: No considerable sales. Quotations: 4-inch, \$25.50; 6 to 12-inch, \$24.50; 16-inch and larger, \$24; all per net ton. Birmingham: Fair total of sales in small lots. Quotations: 4 to 6-inch, \$23; 8 to 12-inch, \$22; over 12-inch, average, \$21; all per net ton, f. o. b. Birmingham. New York: Little business. Quotations: 6-inch, \$21 to \$22 per net ton at tidewater.

**Lead.**—New York: Some purchases, apparently by dealers only. Prices unchanged at 4.5 cents. Chicago: Quotation, 4.525 to 4.55 cents. St. Louis: Quotation, 4.475 to 4.50 cents.

**Wood Water Pipe.**—The Wyckoff Supply Company, manufacturers of wood pipe, have received a number of letters from users of their pipe stating experiences with the same. One states that by actual measurement he finds the wood pipe to be delivering 19 per cent more water than would the same size of cast iron pipe. He also states that the city plumbers are "delighted at the quick and easy manner in which house connections can be made under water pressure." One water commission in Vermont recently replaced some old wood pipe 4 inches in diameter with 6-inch pipe, and found the 4-inch in a perfect condition, although it was laid in 1887, and expects to relay it in another street. This has received pressure up to 120 pounds. The town is using this water pipe for its various distribution mains up to 12 inches in size. A

water company in a New York city has taken out wood water pipe which had been in the ground for 42 years under a pressure of 30 pounds and found it in a perfect state of preservation. The company also manufactures steam pipe covering of wood staves.

### New Iowa Portland Cement Plant.

The Mason City (Iowa) plant of the Lehigh Portland Cement Company will probably be in operation by October 1. It has a capacity of 5,000 barrels daily, using limestone and clay obtained on its property. The stone crushing plant has a daily capacity of 2,000 tons of rock, and will reduce pieces 36 inches in size down to 2 to 2½ inches. The crushed stone is delivered by a belt conveyor to a raw material building 992 feet long, where material for about 1,000,000 barrels of cement can be stored. The plant has six kilns driven by variable speed motors operating in connection with variable speed coal feeders. The stockhouses are three in number and hold 1,000,000 barrels, and the shipping facilities will permit 80 cars to be loaded daily.

**American Filter for Siam.**—The Jewell Export Filter Company, of New York, has received a contract for supplying a filtration plant of about 6,336,000 gallons capacity to the Siamese Government at the new Bangkok water works. The pipe contract has gone to a French maker. The water will be carried from the river, which is the source of supply to the city by a canal 25 miles long, which will be built by the Government by day labor. The water will be delivered to four settling basins, which will also be constructed by the Government, and will be led from them by gravity to the purification works. These comprise 12 filter units, each 17 feet in diameter, arranged in two rows in a space about 53 x 130 feet. The building housing the plant is not a part of the Jewell contract. The purified water will be stored in an underground reservoir and pumped from there to a raised tank supplying the distribution mains.

**New Sales Manager for Pulsometer Company.**—The Pulsometer Company has secured as general sales manager B. F. DeGress, recently New York district manager of the Crocker-Wheeler Company, who, in addition to the general duties of that position, will carry on a series of experiments with a view to improving certain features of the pulsometer in order to make it suitable for general pumping work in power plants, industrial establishments, etc.

**Flaming Arc Lamps for Augusta.**—It is stated as practically certain that Augusta, Ga., will adopt for lighting Broad street the Adams-Bagnal regenerative type of the flaming arc lamp, which is said to give out about four and one-half times as much candlepower as the present lights on Broad street. Tungsten lamps also are being considered for this street.

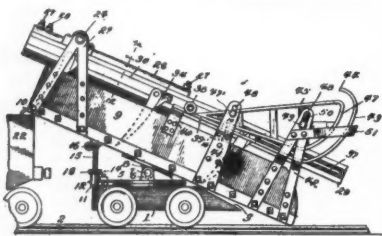
**Mammoth Gasholder.**—The Alleghany Heating Company, one of the subsidiaries in Pittsburg of a Philadelphia company, has awarded a contract to the Riter-Conley Manufacturing Company for what is said to be the largest gasholder in the world. The holder will have a capacity of 6,000,000 cubic feet of natural gas. The diameter will be 226 feet and the height 208 feet, and it will contain about 500,000 tons of steel. It is expected that the construction will give employment for over a year to more than 400 men in the shop and in erection.



## PATENT CLAIMS

998,378. **LOADING DEVICE.** Isaac Newton Myers, Los Angeles, Cal. Serial No. 513,221.

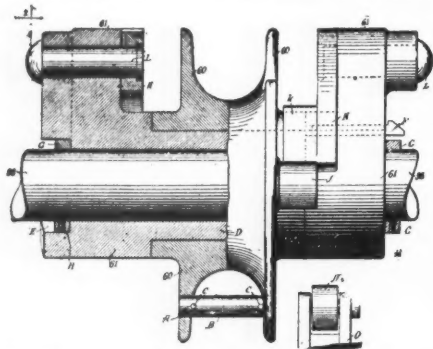
A pivoted steam chest or cylinder, guide ways upon the sides of the cylinder, slides carried by the guides, shovel members carried by the slides and depending therefrom,



means upon the slides for preventing the swinging of the shovels in one direction, means for tilting the cylinder to elevate the slides and shovels, means for lowering the slides and for returning the slides and shovels to their initial position.

999,026. **TRIP MECHANISM FOR WELL-SINKING MACHINES.** Hiram H. Haight, Winnebago, Minn. Serial No. 622,096.

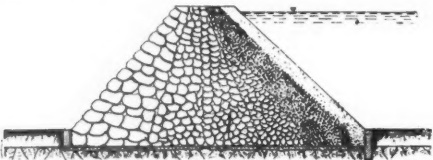
A trip mechanism for well-sinking machines, comprising a driving shaft; a housing rotatively mounted on said driving shaft adapted to be engaged therewith; a winding pulley rotatively mounted on said



housing; engaging devices for fixedly connecting said housing and said pulley; and releasing devices fixedly mounted in the path of said engaging devices to release the said pulley from the said housing.

998,813. **DAM AS CLOSURE FOR COLLECTING-BASINS CONSTRUCTED IN A FILTERLIKE MANNER OF LOOSE SMALL ROCK.** Willy Todt, Dusseldorf, Germany. Serial No. 623,445.

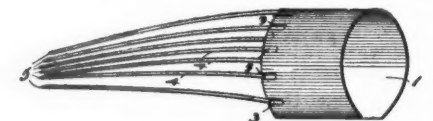
A dam consisting of loose small rock, to serve as closure for a collecting basin, constructed in such a manner that the loose small rocks are arranged, like a filter, according to their grade of fineness in such



a manner that the finest grade of the material is disposed on the water side, and the remainder of the material gradually increases in grade of fineness toward the outside, the air side of the dam.

999,106. **TILE AND SEWER-DRAIN PROTECTOR.** Martin N. Hagaman, Luther V. Smiley and George W. Hall, La Fayette, Ind. Serial No. 587,265.

A tile and sewer drain protector comprising a body formed of a strip of sheet metal having one end edge provided with



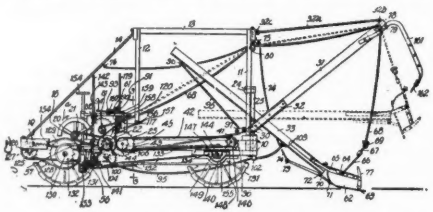
regularly spaced seats, said body being adapted to be rolled into tubular form, and penetrating prongs or pins carried by and projecting from said seats.

998,691. **LIQUID BITUMINOUS COMPOUND AND PROCESS.** Serial No. 430,101.

The process of producing a bitumen or asphalt in liquid form at ordinary temperatures which consists in first melting the bitumen or asphalt, mixing residuum oil of petroleum and red oil, heating this mixture of oils to the temperature of about 212° F., then adding this mixture of oils so heated to the melted asphalt or bitumen, agitating thoroughly the mixture thus formed by the oils and the bitumen or asphalt, cooling this mixture to about the temperature of 212° F., raising a mass of water substantially equal in weight to the weight of the mixture thus formed to the temperature of about 212° F., adding ammonia water to the water with its temperature thus raised, and then mixing the water thus provided with ammonia to the mixture of the asphalt or bitumen and the two oils while the temperatures are maintained as substantially 212° F.

998,308. **EXCAVATING-MACHINE.** Otto W. Siebenhaar, Fond du Lac, Wis., assignor of one-half to B. F. & H. L. Sweet Company, Fond du Lac, Wis., a Corporation of Wisconsin. Serial No. 526,699.

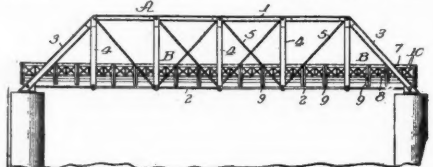
In an excavating machine, in combination, a supporting framework, a shovel movably mounted thereon, means for imparting a longitudinal thrust to said shovel, means



for raising said shovel, means for positively locking said shovel in position to retain its load, means for tripping said locking means to tip said shovel forwardly to discharge its load from the front thereof, and a scraper carried by said framework and arranged in position to be engaged by any material carried by the shovel when the same is tipped.

998,523. **BRIDGE.** William H. Jones, Leavenworth, Kan., assignor to The Missouri Valley Bridge & Iron Company, Leavenworth, Kan., a Corporation of Kansas. Serial No. 622,851.

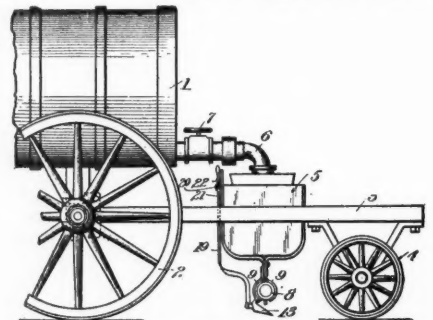
A bridge span comprising spaced main trusses, a floor for said bridge span and



means for supporting said floor, said supporting means comprising secondary trusses secured directly to the main trusses, and transverse beams connected to said secondary trusses, substantially as described.

998,983. **FLUID-DISTRIBUTING DEVICE.** Charles P. Price, Boston, Mass., assignor to American Tar Company, Boston, Mass., a Corporation of Massachusetts. Serial No. 455,694.

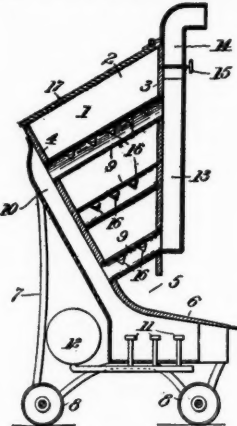
The combination with a movable distributing apparatus, having a plurality of separated delivering openings, of a downwardly inclined splash board arranged below said



openings and carried by said apparatus and having a substantially smooth surface for receiving the material, and for evenly spreading a coating of the same on a road-bed as it runs from the lower edge of the splash board.

998,984. **DEVICE FOR HEATING BROKEN STONE OR OTHER MINERAL AGGREGATE.** Charles P. Price, Malden, Mass., assignor to American Tar Company, Boston, Mass., a Corporation of Massachusetts. Serial No. 545,394.

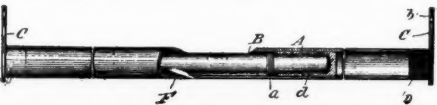
A device for heating mineral aggregate comprising a receptacle having a front wall, a rear wall and a substantially hori-



zonal elongated supporting shelf at the lower end of said receptacle, said shelf projecting to a point at some distance in front of the front wall, and spaced below the same, whereby the material in the receptacle rests on said supporting shelf, and may be readily removed therefrom, and means for supplying a heating medium to the material in the receptacle.

999,066. **SPIRIT-LEVEL FOR CONTRACTORS.** Charles C. Vaughan, Florence, Ala. Serial No. 557,058.

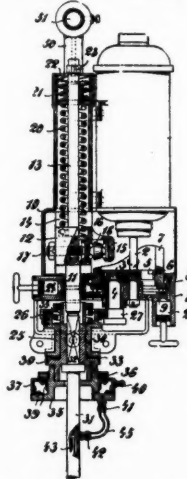
A spirit level, comprising a tubular case having a slight opening in the wall thereof, a spirit tube arranged in said casing



and having cord wound thereon to isolate it from the wall of said casing, and means for securing said spirit tube in said casing.

998,910. **ROCK-DRILLING MACHINE.** Paul Lange, Brieg, near Breslau, Germany. Serial No. 478,196. Divided. Serial No. 605,275.

In a rock-drilling machine, the combination with a hammer and an intermittently rotating tool holder adapted to receive the tool and means for causing said hammer to strike against said tool; of an annular chamber at the outer end of said holder adapted to contain flushing water, said



chamber being formed by an annular groove in said holder and by a stationary ring surrounding said groove, the outer end of said holder adapted to rotate within said stationary ring, a hose connection on said stationary ring for supplying flushing water to said chamber, the tool having a central boring adapted to conduct flushing water, and a flexible connection between said annular chamber and said tool boring communicating with said boring below the point where the tool is attached to the holder.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO.
<b>STREET IMPROVEMENTS</b>				
Ohio.....	Wooster.....	Aug. 18, 10 a.m.	Grad. and pav. with brick 1.52 miles road.....	James R. Marker, St. Hwy. Comr.
Ohio.....	Mount Gilead.....	Aug. 18, 11 a.m.	Improving 3 roads.....	Clifton Sipe, County Auditor.
Washington.....	Seattle.....	Aug. 18.....	Paving Beacon avenue.....	Board Public Works.
Georgia.....	Atlanta.....	Aug. 18.....	Paving with creosoted wood blocks, 5,000 sq. yds.....	Chairman Street Com.
New Jersey.....	Saybrook.....	Aug. 18, 8 p.m.	Improving sidewalks and curbing in North Broad St.....	Town Committee.
Illinois.....	Carmi.....	Aug. 19, 2 p.m.	Constructing 7,400 ft. gravel road.....	F. W. Stinnett, Town Clerk.
Pennsylvania.....	Canton.....	Aug. 19.....	Crushing and delivering 1,000 perches of stone; stone crusher furnished.....	John Eagleson, Secy., R. D. Washington, Pa.
Kansas.....	Lawrence.....	Aug. 19, noon.....	Building masonry culvert, Leocompton township.....	R. F. Buck, Township Clerk.
Iowa.....	Marshalltown.....	Aug. 21, 9 a.m.	Furn. material and labor for curbing and paving sts. including 14,000 sq. yds. cement paving and 2,450 lin. ft. curbing.....	L. Derby, City Clerk.
Texas.....	San Angelo.....	Aug. 21.....	Laying 22,000 sq. yds. of street pavement; vit. brick, rock asphalt, asphaltic cement, creosoted wood block or rock macadam with cement grouting.....	J. J. Goodfellow, City Engr.
Virginia.....	Culpepper.....	Aug. 21.....	Repairing roadway.....	Major H. L. Pettus.
Iowa.....	Burlington.....	Aug. 22.....	Constr. cement sidewalks about school.....	D. S. Cooper, Secretary.
Ohio.....	Cleveland Hights.....	Aug. 22, noon.....	Paving Edgehill Road with brick, asphalt or macadam and constructing sidewalks.....	H. H. Canfield, Village Clerk.
New York.....	White Plains.....	Aug. 22.....	Laying sidewalk, curb and gutter on Waldo avenue.....	John T. Rehill, Pres. Bd. Trus.
Ohio.....	Columbus.....	Aug. 22.....	Paving 3 streets with brick, or asphalt; also laying water service pipes.....	H. S. Holton, Dir. Pub. Service.
Indiana.....	Miami.....	Aug. 23, noon.....	Grading, draining and paving with gravel; culverting and erecting bridges and arches.....	Board Commissioners.
Virginia.....	Wise.....	Aug. 23, 11 a.m.	Constr. 272,000 sq. yds. of macadam.....	P. St. John Wilson, Hwy. Comr.
Pennsylvania.....	Harrisburg.....	Aug. 23, 2 p.m.	Constructing 22,560 ft. of road in Mifflin Co.....	Edward M. Bigelow, St. Hwy. Comr.
Pennsylvania.....	Harrisburg.....	Aug. 23.....	Reconstr. 25,560 ft. road in Derry Township and 34,793 ft. road in Fermanagh township.....	E. W. Bigelow, St. Hwy. Comrs.
Illinois.....	Charleston.....	Aug. 23, 11 a.m.	Constr. 2 sections bituminous macadam road 1 mile long; to be limestone macadam 8-in. thick, 9 ft. wide, treated with bituminous binder via penetration method.....	Board Hwy. Coms.
Illinois.....	Grant Park.....	Aug. 26, 2 p.m.	Constructing 1½ miles stone road.....	Henry Fine, Commissioner.
Alabama.....	Selma.....	Aug. 28.....	Grading and graveling 17.17 miles road; 77,000 cu. yds. embankment; 37,300 cu. yds. gravel; etc.....	G. R. Thomas, Co. Engr.
Washington.....	Spokane.....	Aug. 29, 2 p.m.	Constructing County road.....	R. W. Butler, Clerk Board Coms.
Ohio.....	Caldwell.....	Aug. 29.....	Improving several streets.....	H. F. Neuhart, Village Clerk.
Ohio.....	Liberty.....	Aug. 30, noon.....	Improving several roads by draining, culverting, grading and macadamizing.....	Town Clerk.
Indiana.....	Greenfield.....	Aug. 31.....	Improving 5 miles of highway.....	Charles H. Troy, County Auditor.
Minnesota.....	Minneapolis.....	Sept. 1, noon.....	Dredging in Cedar Lake and filling low lands and boulevards adjacent.....	J. A. Ridgway, Secy. Park Board.
Indiana.....	Marion.....	Sept. 5.....	Constructing 8 roads in Grant County.....	County Commissioners.
Idaho.....	Lewiston.....	Sept. 6.....	Hard surfacing 19,000 sq. yds. pavement.....	C. F. Leland, City Clerk.
<b>SEWERAGE</b>				
Missouri.....	St. Louis.....	Aug. 18, noon.....	Constr. about 1,368 ft. of circular brick sewer, 182 ft. 78-in. and 948 ft. of 42½-in. mean diameter, egg-shaped brick sewer with appurtenances.....	S.T. Findlay, Secretary.
Kentucky.....	Louisville.....	Aug. 18, noon.....	Laying 4,220 ft. 10-in. sewer and 24-in. to 45-in. storm water drain.....	P. L. Atherton, Chm. Sewerage Com
Ohio.....	Shreve.....	Aug. 18, noon.....	Bldg. sanitary sewer system, cost \$19,000; sewage disposal plant, \$7,500.....	Clem Morgan, Village Clerk.
Ohio.....	Youngstown.....	Aug. 18, noon.....	Constructing sewer on Albert street.....	W. H. McMillan, Clerk.
Minnesota.....	Eveleth.....	Aug. 18.....	Constructing 3,300 ft. 8-in. and 120 ft. 6-in. sanitary sewers.....	D. P. McIntyre, City Clerk.
New Jersey.....	Skillman.....	Aug. 21.....	Constr. 2 miles 5 to 12-in. vit. pipe sewers, Y branches, etc., also sewage disposal works.....	D. F. Weeks, M. D., Vil. Supt.
Minnesota.....	Montevideo.....	Aug. 21, 8 p.m.	Bldg. about 3,200 ft. vit. pipe sewer, manholes, etc.....	M. E. Chamberlin, City Clerk.
South Carolina.....	Clinton.....	Aug. 21.....	Constr. 9 miles 8 to 12-in. sewer and 2 settling tanks.....	W. H. Millan, Chm. Sewer Com.
Georgia.....	Thomaston.....	Aug. 23.....	Constructing sewer system.....	City Clerk.
Missouri.....	Shelbina.....	Aug. 23, 3 p.m.	Building sewer system; water works, etc.....	E. J. King, City Clerk.
Wisconsin.....	Racine.....	Aug. 26.....	Constructing Blue River sewer and retaining wall.....	Board Public Works.
Pennsylvania.....	Harrisburg.....	Aug. 31.....	Constructing river front interceptor.....	Board Public Works.
Iowa.....	Wapello.....	Aug. 31.....	Constr. 4,000 ft. 24 to 10-in. vitr. pipe sewer.....	Board Public Works.
Louisiana.....	Lake Charles.....	Sept. 11.....	Constr. 22 miles 6 to 24-in. clay pipe sewers, pumping station and motor driven centrifugal pumps and 4 reinforced concrete reduction tanks.....	A. A. Wentz, Secretary. W. G. Kirkpatrick, Engr., Jackson Mich.
Louisiana.....	New Orleans.....	Sept. 11, noon.....	Constr. Napoleon ave. system; drainage canals and pipe lines; 53,000 cu. yds. reinforced concrete and 75,000 ft. 6-to 36-in. clay pipe.....	Leon Manberret, Clerk.
<b>WATER SUPPLY</b>				
Colorado.....	Norwood.....	Aug. 20.....	Adding about 57,000 cu. yds. earth to a 15-ft. dam.....	A. M. Browning, Engineer.
South Carolina.....	Clinton.....	Aug. 21, 3 p.m.	Constr. 9 miles 8 to 12-in. sanitary pipe sewers and 2 settl'g tanks.....	W. M. McMillan, Chm. Sew. Com.
West Virginia.....	Clarksburg.....	Aug. 21, noon.....	Constructing concrete storage dam on West Forks River.....	Water & Sewerage Board.
Iowa.....	Prairieburg.....	Aug. 21, noon.....	Drilling well for water works.....	J. J. Dolan, Clerk.
Ohio.....	Bedford.....	Aug. 21, noon.....	Bldg. 10-in. water main and laying water pipes in Warrensville Center Road.....	C. C. Lowe, Village Clerk.
Michigan.....	Reed City.....	Aug. 21, 1 p.m.	Bldg. 12-in. suction pipe and inlet, 65 ft. radial brick or concrete chimney with breeching and steam water pump.....	J. F. Rayfuse, Chm. Water Bd.
Nevada.....	Fallon.....	Aug. 22.....	Building 2 pumping stations.....	W. H. Reeves, City Clerk.
New York.....	Mattewan.....	Aug. 22, 8 p.m.	Furnishing and laying about 22,000 ft. of castiron 4, 6, and 8-in. pipe and fittings; also 5,700 ft. of 24-in. vitrified sewer pipe.....	B. I. Roosa, City Clerk.
Massachusetts.....	Athol.....	Aug. 22, 2 p.m.	Laying about 9,000 ft. of 12-in. c. i. water pipe.....	H. L. Hapgood, Chm. Bd. Wat. Com.
North Dakota.....	Bismarck.....	Aug. 22.....	Sinking two 3-in. wells and constr. a 50,000-gal. capacity steel water tank on a 60-ft. steel tower; also furn. 800 lin. ft. 6-in. c.-i. pipe; one pump and air-lift pumping system.....	F. A. Behounek, Secy. Bd. Trus.
Georgia.....	Thomaston.....	Aug. 23, 2 p.m.	Constr. waterworks and sewer system.....	Claude Worrill, Mayor.
Massachusetts.....	Lawrence.....	Aug. 23.....	Furnishing turbine driven centrifugal pump and condenser of three million gallon capacity.....	Water Board.
Ohio.....	Rockport.....	Aug. 24, noon.....	Constr. water mains on several streets.....	F. Feuchter, Clk. Bd. Trus. Pub. Afrs.
Missouri.....	Shelbina.....	Aug. 25, 3 p.m.	Bldg. water works system; furnishing and erecting tower and tank, 70,000 gals. cap., 100 ft. high; also bldg sewer system.....	E. J. King, City Clerk.



## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO.
<b>WATER SUPPLY (Continued)</b>				
California.....	Dorris.....	Aug. 25, 8 p.m.....	Constructing water works system.....	R. L. Oliver, Chm. Bd. Trustees.
North Dakota....	Minot.....	Aug. 28, 7:30 p.m.....	Constructing 10,000 ft. water main extension; also sewage pumping station; cost \$20,000.....	L. J. Thompson, City Auditor.
Ohio.....	Cleveland.....	Aug. 31.....	Constructing West Side Crib.....	Water Commissioners.
Iowa.....	Osage.....	Sept. 1.....	Drilling and casing deep well.....	A. S. Wright, City Clerk.
Montana.....	Manhattan.....	Sept. 4.....	Constr. gravity system water works.....	R. H. Dean, Town Clerk.
Texas.....	Fort Worth.....	Sept. 5.....	Constr. dam containing 300,000 cu. yds. earth and 60,000 cu. yds. masonry; also 6½ miles concrete pipe.....	W. J. Estes, City Secretary.
Australia.....	Queensl'd, Brisb.	Jan. 30, noon.....	Furnishing a 6 million gallon pumping plant of 2 or 3 units.....	G. E. Johnston, Secy. Board, Albert St., Brisbane, Queensland.
<b>BRIDGES</b>				
Ohio.....	Bucyrus.....	Aug. 19.....	Constructing 2 steel 44-ft. span concrete bridges.....	G. F. Ackerman, County Auditor.
Kansas.....	Lawrence.....	Aug. 19, noon.....	Constructing a 42-ft. span highway bridge.....	W. R. Green, County Clerk.
Minnesota.....	Albert Lea.....	Aug. 21.....	Constructing concrete bridge and dam.....	Wm. Barneck, City Engineer.
Tennessee.....	Somerville.....	Aug. 21, 2 p.m.....	Erecting 5 steel bridges.....	H. P. Hobson, Chm. Bd. Comrs.
Rhode Island....	Apponaug.....	Aug. 21, 5 p.m.....	Painting with graphite paint, one coat, 3 bridges.....	J. T. Lockwood, Town Clerk.
West Virginia....	Princeton.....	Aug. 22, noon.....	Constructing 2 steel bridges and abutments.....	County Commissioners.
Virginia.....	Bristol.....	Aug. 23, 4 p.m.....	Constr. 3 40-ft. highway bridges.....	J. L. C. Smith, Chm. St. Com.
Pennsylvania....	Williamsport.....	Aug. 23, noon.....	Concrete Jacket repairs to east abutment of Jersey Shore river bridge; also repairing pier with timbers or concrete.....	A. P. Zuber, Clerk Co. Comrs.
Arkansas.....	Success.....	Aug. 23.....	Constructing a 150-ft. span steel bridge on concrete piers.....	B. B. Holifield, Engr., Rector, Ark.
Michigan.....	Grand Rapids.....	Aug. 24, 8 p.m.....	Construct. reinf. concrete bridge and approaches.....	E. H. Christ, Pres. Bd. Pub. Wks.
Ohio.....	Cleveland.....	Aug. 26, 11 a.m.....	Constructing bridge work on several roads.....	J. F. Goldenbogen, County Clerk.
Washington.....	Spokane.....	Aug. 31, 11 a.m.....	Constructing Latah Creek Bridge.....	City Clerk.
Louisiana.....	Bermuda.....	Aug. 31.....	Constr. steel highway bridge.....	P. E. Prudhomme, Chm. Com.
Florida.....	Tampa.....	Sept. 6, 2 p.m.....	Constr. reinforced concrete or concrete steel bridge with bascule lift.....	D. B. McKay, Chairman.
<b>LIGHTING AND POWER</b>				
Sask., Can.....	Wilkie.....	Aug. 21, noon.....	Furnishing one 60 kw., 3-phase, 60 cycle, 2,200 volt, a. c. generator, exciter, etc.; also one 100 h.p. internal combustion engine; pumping machinery, pneumatic storage tank; c. i. pipe and bldg. power house and reservoir.....	T. A. Dinsley, City Secretary.
Florida.....	Palatka.....	Aug. 22.....	Lighting with 2,000-candle power arc lamps and 100 or more 30, 40 or 60-candle-power tungsten incandescent lamps.....	City Council.
Florida.....	So. Jacksonville..	Aug. 24.....	Constructing electric light plant and water system.....	W. W. Swain, Chm. Bd. Trustees.
South Carolina..	Honea Path.....	Sept. 1.....	Constr. electric light plant and water works system; cost \$37,000.....	J. F. Monroe, Chm. Bd. Pub. Wks.
Australia.....	Brisbane.....	Jan. 30, noon.....	Designs, supply and erection at Mount Crosby Pumping Station of alternatively one, two and three complete units consisting of power generating pumps and plants, etc.....	Geo. Johnston, Albert St., S&W.Bd
<b>MISCELLANEOUS</b>				
New Jersey....	Camden.....	Aug. 18, 8 p.m.....	Furn. combination Auto Patrol and Ambulance for Police Dept	Joshua C. Haines, Chm. Police Com.
Ohio.....	Bellaire.....	Aug. 18, noon.....	Furnishing 1,300 yds. stone.....	W. J. Campbell, Pres. Bd. Trustees.
Wisconsin.....	Shawano.....	Aug. 22.....	Erecting asylum building, boiler house and laundry.....	O. O. Weigand, County Clerk.
Pennsylvania....	Philadelphia.....	Aug. 31, noon.....	Erecting Municipal Convention Hall in Fairmount Park.....	J. E. Reyburn, Mayor.
Virginia.....	Richmond.....	Sept. 5, noon.....	Certain dredging along left shore James River.....	City Engineer.
Palestine.....	Jerusalem.....	Sept. 13.....	Constr. and operating water works, electric light and tramway concessions.....	No. 7052 Bur. M'f'ers., Wash. D.C.

## STREET IMPROVEMENTS

**Texarkana, Ark.**—Bowie County Good Roads Association is considering bond issue of \$500,000 to build good roads throughout county.

**Chico, Cal.**—Election will be held for voting on bonding county for \$500,000 for purpose of improving roads.

**Los Angeles, Cal.**—Highway Board recommends purchase of rock-crushing plant.

**Oroville, Cal.**—Election will be held to vote on \$500,000 bond issue for building good roads.

**Vallejo, Cal.**—City will have municipal paving plant.

**Willows, Cal.**—Election will be held Sept. 12 for voting on proposition of bonding county for \$450,000 for roads and bridges; \$160,000 will be used for roads.

**Yreka, Cal.**—Siskiyou County has appointed Good Roads Commission to view roads of county, and report on amount of money required to make them perfect highways.

**Washington, D. C.**—Extension of Rock Creek drive from Massachusetts avenue to Montrose park and widening of Lovers' Lane are contemplated.

**Marianna, Fla.**—Voters have authorized issuance of \$300,000 bonds for good roads proposition.

**Plant City, Fla.**—City Council has ordered laying of 10 miles of good sidewalks.

**Tampa, Fla.**—Sidewalks will be constructed along Jefferson st. between Ross and Michigan aves.; Ross ave. between Central and Nebraska aves.; on Fifteenth st., and on Nebraska ave. from Eighth ave. to city limits, walks to be placed on both sides of thoroughfares.

**Tampa, Fla.**—County commissioners have ordered North Hillsborough ave. paved with shell for distance of two miles, connecting Lake Magdalene pavement, or Amelia ave. in North West Tampa, with Florida and Nebraska ave. pavements in north Tampa.

**Atlanta, Ga.**—County Commissioners have decided to co-operate with city in making proposed driveway from West End to Grant Park.

**Waycross, Ga.**—Ware County Commissioners will unite with Pierce County authorities to improve highway leading into Florida from Waycross.

**East St. Louis, Ill.**—Petition has been re-

ceived by Board of Local Improvements for paving of Missouri ave.

**Evansville, Ind.**—Resolutions have been made providing for following: Improvement of Governor street from Jefferson avenue to Monroe avenue, by grading, curbing, guttering and paving; also alley between 3d and 4th sts. from Chestnut st. to Walnut st. by grading, guttering and paving.

**Indianapolis, Ind.**—Following road improvements will be made: First alley south of Maryland st., from Traub ave. to Elder ave., with grade and gravel roadway; Maryland st., from Traub ave. to Elder ave., with grade and gravel roadway, grade cement walks and curb; Norwood st., from Greer st. to Noble st., with improved roadway; Emerson ave., from Michigan st. to Frank st., or St. Clair st., with grade and gravel roadway, grade cement walks and curb; Graceland ave., from 38th st. to 40th st., with improved roadway; Alvord st., west side, from 16th st. to 19th st., with cement walks, approaches and curb.

**South Bend, Ind.**—Resolution has been adopted to accept \$1,000 donation from Chamber of Commerce toward improving South Michigan st. from Ewing ave. to Leeper road.

**Fort Dodge, Ia.**—Petitions have been made to City Council for asphalt paving of 2d ave. and 7th st.

**Oskaloosa, Ia.**—Council is considering paving of two streets and repaving of High ave.

**Fort Scott, Kan.**—Ordinance has been passed providing for grading and paving with vitrified brick and curbed with hard sandstone portion of Main st.

**Leavenworth, Kan.**—Ordinances have been passed providing for curbing, regrading and paving of Sherman st.

**Lexington, Ky.**—Ordinances have been passed providing for construction of concrete sidewalks on Rose st. from Main to High sts. and concrete curbing and guttering on Arlington ave. from High to Maxwell sts.

**Wickliffe, Ky.**—County will spend \$6,000 for 9 miles of gravel roads: From Wickliffe to Barlow, 7 miles; La Center and Barlow rd., 1 mile; McCracken County line to Kevil, 1 mile.

**New Orleans, La.**—Petition has been made for paving of Sycamore st.

**Fair Hill, Md.**—Cecil County Road Commission has decided to build permanent roads from Fair Hill to Appleton, from Gilpin's Bridge to Delaware line, from Belle Hill to Miller's Corner, and from Kirk's Bridge to Blue Ball.

**Haverhill, Mass.**—Council has passed \$30,000 bond order for construction of interurban road at Ward Hill.

**North Andover, Mass.**—State Highway Commissioners have agreed to extend State boulevard from North Andover to Ward Hill.

**Northbridge, Mass.**—Sum of \$9,000 will be recommended to voters for improvement of Church st. from Memorial sq. to Johnston's ave.

**Saginaw, Mich.**—Albee Township has voted for proposition to issue \$15,000 of bonds for making good roads.

**Biwabek, Minn.**—Council will issue \$30,000 in bonds for paving and curbing Main st. Bids will shortly be required.

**Brookhaven, Miss.**—Voters have authorized construction of 70 miles of road, and bonds to amount of \$150,000 have been issued to pay for same.

**Lynn, Mo.**—Citizens of Osage County are contemplating building of road through county.

**Camden, N. J.**—Resolution has been adopted recommending issuance of \$50,000 bonds for improvement of streets. Election will be held shortly.

**Camden, N. J.**—Ordinance has been passed authorizing paving of Haddon, Knight, Harvard, East Madison and East Stiles aves. with cement pavements.

**Haddonfield, N. J.**—Plans and specifications drawn by Borough Engineer, J. C. Remington, Jr., for the improvement of the streets awarded accepted by Council.

**Flemington, N. J.**—Hunterdon County freeholders have authorized County Engineer to survey roads from Flemington to Cherryvale, Pittstown, Everittstown and Milford, from Flemington to Sand Brook, Sergeantsville and Stockton, and from Flemington to Croton and Frenchtown with view of improving them in near future.

**Hawthorne, N. J.**—Ordinance has been passed providing for sidewalks on Lafayette ave.

**Binghamton, N. Y.**—Ordinance is being considered providing for macadamizing Upper Court st.

**Jersey City, N. J.**—Street and Water Board has requested Board of Finance to appropriate \$4,456.40 for repaving of Hancock ave.

**Kearny, N. J.**—Ordinances have been passed providing for paving of Kearny ave. and Elm st. with bitulithic.

**Albany, N. Y.**—The following appropriation bills have been approved of: \$1,000,000 for highway improvement in Onondaga and Jefferson Counties; \$250,000 for good roads construction in Greene County; \$450,000 for good roads construction in Oswego and Onondaga Counties.

**Binghamton, N. Y.**—City will repave Ferry st. bridge at cost of about \$14,000.

**Schenectady, N. Y.**—Ordinance has been passed directing grading, curbing and paving of Thomson st., from Broadway to Guiderland ave.

**Sherburne, N. Y.**—Voters have decided to bond village for \$2,500 for purpose of widening and curbing No. Main st.

**Fayetteville, N. C.**—County Commissioners are considering \$200,000 bond issue to build good roads.

**Raleigh, N. C.**—Proposition will be considered for widening and improving Hillsboro st.

**Winston-Salem, N. C.**—Citizens have voted \$350,000 bonds; \$75,000 will be used for street improvements.

**Milton, N. D.**—Extensive road improvements are contemplated.

**Akron, O.**—Ordinances have been passed providing for grading, curbing and paving of Voris st., Annadale ave. and Highland ave.

**Cincinnati, O.**—Plans have been submitted to Service Director Sundmaker for improvements to Fountain esplanade at 5th ave. and Vine st.

**Canby, Ore.**—Road improvements are contemplated.

**Dallas, Ore.**—By City, for street sprinkling, to A. McCullum, at \$170 per month.

**McMinnville, Ore.**—Yamhill County citizens think proposed Capital highway between Portland and Salem should be on west side of river, and will make effort to have route so located.

**Portland, Ore.**—Following streets will be paved: East Yamhill, from East 46th to East 45th sts., Hassam pavement; Division st., from East 41st to East 60th, bitulithic pavement; Denver ave., from Brainard addition to Killingsworth ave., bitulithic pavement; East 44th st. district, bitulithic pavement; East 32d st., from Hawthorne to Market, Hassam pavement; Borthwick st., from Russell to Stanton, bitulithic pavement; Brooklyn district, including Waverleigh Heights, bitulithic; Thurman st., in Willamette Heights, bitulithic; Corbett st. fill; Clackamas st., from Holladay's addition to East 21st st., bitulithic.

**Beaver Falls, Pa.**—Bids will be received until 8 p. m. Aug. 26 by City Council for purchase of municipal bonds and street improving bonds.

**Chester, Pa.**—Ordinances have been passed as follows: Select Bill No. 104, regulating the manner and conditions in and upon which streets, roads, avenues, alleys, sidewalks and footways of city may be opened or excavated for any purpose; Common Council Bill No. 2, providing for paving of roadway of 8th st., between Morton ave. and Hinkson st., with filbertine, etc.; Common Council Bill No. 5, providing for curbing and paving sidewalk on both sides of 4th st., from Hinkson st. to Melrose ave., with brick or granolithic.

**East McKeesport, Pa.**—Petition has been received asking borough to pave 5th ave. to Greensburg ave.

**Reading, Pa.**—Ordinance has been passed providing for paving with vitrified block Court st. from 2d to 4th sts.

**Woonsocket, R. I.**—The Council has passed following matters: Resolution authorizing layout of 5th ave. as a public highway from Mason st. to Chapel st.; resolution authorizing layout of Dewey st. from Diamond Hill rd. to Estes st.; resolution authorizing layout of Estes st. from Social st. to Bellingham st.; ordinance providing for construction of sewers in Lyman st. from Harris ave. to Oakley rd.

**Chester, S. C.**—Roadway will be opened from York to Academy st.

**Carthage, Tenn.**—Election will be held for voting on \$300,000 bond issue for purpose of purchasing all toll bridges and turnpikes, and for improving roads in Smith County.

**Decaturville, Tenn.**—Committee will meet Sept. 4 to select highways for improvements under bond issue.

**Knoxville, Tenn.**—Washington County Court has voted bond issue of \$60,000 to build part of Bristol-to-Memphis highway that will pass through that county.

**Memphis, Tenn.**—Construction of pike from Somerville to Memphis via Taylor's Chapel is contemplated.

**Woodbury, Tenn.**—Citizens are considering building of pike 10 miles long between Woodbury and Auburn.

**Beaumont, Tex.**—Meeting has been held for purpose of outlining plan for paving Broadway from Pearl to Seventh st.

**Beaumont, Tex.**—Extensive street paving is contemplated; wooden blocks will be used to large extent.

**Denison, Tex.**—Petition has been presented to City Council asking that steps be taken to improve North Fifth ave.

**Pecos, Tex.**—Bids are asked by City Council for laying cement sidewalks.

**Tilden, Tex.**—Election will be held Sept. 2 for voting on issuance of \$35,000 road bonds for McMullen County.

**Salt Lake City, Utah.**—Residents on the Northeast bench are planning complete system of sidewalks.—L. L. Goddard is interested.

**Buchanan, Va.**—Town Council has decided to macadamize Main st. from bridge to corporate limits.

**Spotsylvania, Va.**—Petition has been presented to County Board asking for election to be held on Nov. 7 for voting on \$30,000 bond issue for permanent improvement of public roads.

**Burlington, Vt.**—Petition has been filed asking Public Service Commission to abolish grade crossings at King, Main and College sts.

**Chehalis, Wash.**—Council has passed resolutions for paving Washington ave. from 1st to 4th, and 1st, 2d, 3d and 4th from Market to Washington, with Warrenite, 22 ft. wide.

**Spokane, Wash.**—Paving of North Wall st. from Garland to city limits is being considered.

### CONTRACTS AWARDED

**Tuscaloosa, Ala.**—By City, for macadamizing of 10th st., to Tuscaloosa Concrete & Supply Co.

**Los Angeles, Cal.**—To Barber Asphalt Paving Co., to improve Vermont ave. at \$56,364 and Labory lane at \$3,886.

**Napa, Cal.**—By Trustees, for bitumenizing Brown st. and portions of 1st, 2d and 3d sts., to City Improvement Co., at 15c per sq. ft., or total of \$8,500.

**Trinidad, Cal.**—To John A. Laughlin, for one-half mile of asphalt and macadam paving, by City Council. The pavement will be laid on Animas and Nevada sts., at approximate cost of \$22,000.

**Jacksonville, Fla.**—By Board of County Commissioners, for paving 64th st. from Lake Shore drive to St. Johns ave., to George R. Foster, at 89c per sq. yd.

**Tampa, Fla.**—By City, for paving with asphalt macadam North boulevard from Grand Central ave. to 200 ft. north of Gordon Keller Memorial Hospital; also Highland park and Highland ave., to W. J. Twett, at \$1.20 per sq. yd. Other bids as follows: R. L. Davis, \$1.25 per sq. yd., and Tampa Sand & Shell Co., at \$1.78 per sq. yd.

**Savannah, Ga.**—For furnishing 15,000 sq. yds. asphalt blocks for completing paving of Abercorn st., to Barber Asphalt Paving Co., of Philadelphia, Pa., at \$1.18½ per sq. yd.

**Evansville, Ind.**—By Board of Public Works, for paving Gum st. with asphalt, to Western Construction Co.

**Muncie, Ind.**—By Board of Public Works, to Contractor William Birch, for construction of combined curb and gutter and cement sidewalk on both sides of Willard st., from Council to Birch st.

**Rushville, Ind.**—By Bd. Co. Comrs., for constructing road in Richland Township by draining and macadamizing, and two roads in Noble Township, one by grading, draining and paving with crushed stone and other by grading, draining and macadamizing, to Wilk & Co., for \$10,495.

**Vincennes, Ind.**—By County for construction of Billings road east of city in Washington township to Elkannah Allen.

**Shenandoah, Ia.**—For about 24,000 sq. yd. asphaltic concrete pavement, to M. Ford, of Cedar Rapids, at \$1.77 per sq. yd.

**Delwein, Ia.**—By City Council, for construction of brick block pavement in city, to Dearborn & Jackson, of Cedar Rapids, and Wm. Horrabin, of Iowa City, for \$1.98 per sq. yd.

**Leavenworth, Kan.**—By City, for curbing Sherman st. and Grand ave., to Fred Tarry & Son, at \$1,965.60.

**Leavenworth, Kan.**—By City, for paving and grading Sherman st. and Grand ave., to O. C. Chapin, at \$16,828.94.

**Leavenworth, Kan.**—To J. Ramsey & Co., of Topeka, by City Commissioners, for paving of Shawnee st. with asphalt mixed with small rock, for \$23,850. The work includes 19,234 sq. yds.

**Boston, Mass.**—By Department of Public Works, to James Doherty, for wood block pavement in East 4th st., between P st. and Farragut rd., for \$5,416.

**Boston, Mass.**—To Daniel E. Lynch, by Public Works Department, for excavating and filling in Sachem st., between Hillside

st. and Parker Hill ave., Roxbury, for \$2,860.

**Boston, Mass.**—To James Doherty, by Department of Public Works, for construction of wood block pavement in Milk st., between Oliver and Broad sts., for \$4,212.

**Boston, Mass.**—To James Doherty, by Department of Public Works, for edge-stones, gutters, crosswalks and artificial stone sidewalks in Standish st., between Harvard and West Park sts., for \$1,233.

**Swansea, Mass.**—By Massachusetts State Highway Commission, Boston, for building of section of state highway, four-fifths of mile long, to P. F. Goivannini, of Boston, for \$4,226. Other bidders were: Joseph McCormick, East Providence, R. I., \$4,267; F. J. Maque, West Newton, \$4,795, and L. H. Callahan, Bristol, R. I., \$4,301.

**Iron Mountain, Mich.**—By Iron County Road Comn. to Payne Constr. Co. for building new highway from city of Crystal Falls to Mansfield Mine, distance 4½ miles.

**Marquette, Mich.**—To Oliver Lacombe, of Negaunee, by Board of Road Commissioners, for grading and improving of highway between Humboldt and Duluth, South Shore & Atlantic railway crossing, about a mile and one-third.

**Pontiac, Mich.**—For paving alleys west and east of Saginaw st. to Lennane Bros., of Detroit, at \$1.70 per sq. yd. for metropolitan brick, and \$1.69 for Minerva block.

**Riverton, Mich.**—For 11 miles of improved gravel road, to Clarence Sheppard, of Ludington, for \$18,000.

**Gloucester, N. J.**—By Council, for street cleaning, to Timothy C. Mealey, at \$404 per month.

**Perth Amboy, N. J.**—Laying asphalt pavement on Oak st. to Hastings Pavement Co.; bitulithic pavements on Sheridan st. and Davidson ave. to Standard Bitulithic Co.; 10 miles sewer at foot of High st. to Johan Jensen.

**Woodstown, N. J.**—By Council, for construction of amesite road, to W. S. Konover, of Trenton, at \$14,198.49.

**Elmira, N. Y.**—To Connors & Gallavan, 514 Partridge st., for paving E. Union pl. with Corning block and Medina curb, for about \$7,425.

**Lestershire, N. Y.**—By Board of Trustees, for laying of Main st. curb and gutter, to Reeder Construction Co., of Bloomfield, N. J., at 43c per lin. ft.

**Lockport, N. Y.**—To Harry E. Whitney, for construction of new cement sidewalk on the south side of West ave., from Transit to Prospect sts., at \$1,195. Other bidders were: John Irwin, \$1,532; C. N. Stainthorpe & Co., \$1,260; C. B. Whitmore Co., \$1,340, and P. F. Niland, \$1,282.

**Fargo, N. D.**—Paving 1st ave. with creosoted block, to Contractor Kennedy.

**Canton, O.**—By Board of Control for paving as follows: High st. to R. C. Roush, at \$21,000; Marion st. to Frank Downs, at \$13,191; improving Smith ave. to Peter Hahn & Son, at \$12,500.

**Cincinnati, O.**—By Board of Control, for paving of Melrose ave., from McMillan to Locust st., to Warren Bros. Co., for \$9,075. Bitulithic will be used.

**Dayton, O.**—By Board of Control, for street paving to Hecker & Kirchner—Smith st., \$1,035; Kirkham st., \$585; Deal ave., \$3,640; Clifton Hollman—Carlisle Ave., \$1,035; alley north of Richard at Parrott st., \$1,722; alley east of Main at Adrian st., \$1,778; I. I. Geiger—Reeder st., \$850; and alley east of Grimes, \$1,277; Joseph Glaser—Highland ave., \$1,005, for grade and gravel, and \$6,022 for sidewalks; George Bair—Miami Chapel rd., \$630; Boyd & Cook—Calm st., \$993.

**Dayton, O.**—To J. S. Geiger, by Board of Montgomery County Commissioners, for furnishing necessary labor and materials for construction of a fill on River road and Essex ave., in Harrison Township, for protection of new River road and Big Four railroad crossing, including about 5,000 cu. yds. of earth work, at \$2,400.

**Fayette, O.**—To M. F. O'Sullivan, West Main st., by Village, for construction of about 8,000 yds. of street paving, for \$18,000. Work includes grading, draining, curbing, crushed stone foundation, vitrified block pavement and cement filler.

**Hamilton, O.**—By Bd. of Control, to pave with sheet asphalt on Chestnut st., to Andrews Asphalt Co., at \$17,004.

**Middletown, O.**—For paving of Baltimore st., to Andrews Asphalt Paving Co., of Hamilton, O., at \$1.97 per sq. yd.

**Wapakoneta, O.**—By City Council, to Logan Construction Co., of Bellefontaine, O., for paving of Court st., for \$5,085.

**Youngstown, O.**—By Board of Control for paving of Glenwood ave., Glenaven, Carroll st., Central ave., sewerage Bernard st. and grading Essex st., as follows: Glenaven paving to Wm. Hynes, \$6,075.75; Carroll st. paving to Charles Harris, \$4,680.80; Glenwood ave., paving, Mahoning ave. to McKinnie st., \$21,241; Glenwood ave., paving, McKinnie st. to city limits, \$13,853.10, both



sections awarded to Sherman De Groot; Bernard st. sewer, James Horah, \$580.00; Essex st. grading, Miller Bros., \$960; Central Ave. paving, James McCarron, \$6,184.90.

**Altus, Okla.**—By City Council for about 20 blocks of bitulithic paving to P. S. Kaul, of Kansas City, Mo., for \$162,354.

**Hood River, Ore.**—By City Council for street improvements in fire limits to Chas. Johnson of The Dalles, at \$24,975 for paving and \$7,277 for curbing.

**Portland, Ore.**—For paving five streets in Kenton district with Westrumite, to Elwood Wiles, at \$1.60 per sq. yd.

**Portland, Ore.**—By City, for construction of waterproof bitulithic pavement on Skidmore and other streets, to Warren Construction Co., at \$306,383.

**Roseburg, Ore.**—To Clark Henery Co., for paving Flint, Masher, Pine and Douglas sts., at a total cost of \$10,800.

**Chester, Pa.**—By City Council, for grading of Morton ave. between Mundy's Run and Ridley River, to John Hanna & Sons, the only bidder. Price was 34c. per cu. yd.

**Mt. Carmel, Pa.**—To Fendale & Co., of Mt. Carmel, for about 26,000 sq. yd. brick paving, \$62,000.

**Philadelphia, Pa.**—For additional work on Northeast Boulevard amounting to \$1,000,000 to McNichol Paving & Construction Co.

**Scranton, Pa.**—For constructing new road from Jessup to Moosic Lake, by County Commissioners, to M. A. Donahoe, of Scranton, for \$6,544.

**South Fork, Pa.**—By Council, for brick for paving to be done on portions of Railroad, Grant, Maple, Church and Lake sts., to Clearfield Brick & Clay Working Co., at \$18 per thousand.

**Springfield, Tenn.**—By County, for construction of 50 miles of pike, to Freeman & Robins.

**El Paso, Tex.**—By city for paving of Upson ave. to Petrolithic & Construction Co.

**Colefax, Wash.**—For paving two main streets and several side streets, to Warren Bros. Construction Co., at \$75,457.65.

**Spokane, Wash.**—By Public Works, for asphalt paving on Northwest boulevard, to J. F. Hill Co., at \$121,720.

**Racine, Wis.**—By City Council, for paving North Erie st., to White Construction Co.

## BIDS RECEIVED

**Los Angeles, Cal.**—Improving 16,465 lin. ft., with oil macadam paving, Eagle Rock rd.; Gailey & Clark, \$1.28 per sq. yd.; Montgomery & Marsh, \$1.45, and Hudson Johnson Constr. Co., \$1.85.

**Naugatuck, Conn.**—For pavement on Maple st. eight bids were received, as follows: Joseph S. Barbara, Mack block, \$2.89 per sq. yd.; Metropolitan, \$2.78 per sq. yd.; Clearfield-Misc., \$2.85 per sq. yd.; Field, Barker & Underwood, Mack block, \$2.78 per sq. yd.; Fred T. Ley, Mack block, \$2.84 per sq. yd.; Metropolitan, \$2.86 per sq. yd.; H. S. Driscoll, Mack block, \$3.63 per sq. yd.; Hammond block, \$3.46 per sq. yd.; Pierson Engineering & Construction Co., Mack block, \$2.89 per sq. yd.; quarter-block, \$2.85 per sq. yd.; Connecticut Hassam Paving Co., Mack block, \$2.84 per sq. yd.; Shomman, \$2.73 per sq. yd.; Robert D. Daly, Mack block, \$2.83 per sq. yd.; August Fiege, Mack block, \$3.06 per sq. yd. Each bid was accompanied by a certified check for \$200, payable to Boro. Clerk. Contract was awarded to Field, Barker & Underwood Co., of Philadelphia, at \$2.78 per sq. yd. for Mack block.

**Jacksonville, Fla.**—Laying large number of sidewalks: A. J. Cesary Co., paving \$1.25 per sq. yd., curbing 9c. per lin. ft.; John J. Kelly, paving \$1.19½ per sq. yd., curbing 9c. per lin. ft.; Jacksonville Concrete Co., paving \$1.27½ per sq. yd., curbing 9c. per lin. ft.

**Fort Wayne, Ind.**—Sidewalks on Berry st. from Barr st., to Monroe st. by William Kruse, 89c. a lin. ft.; by Moellering Construction Co., 91c.; walks on Wagner st., by Moellering Co., 81c. lin. ft.; paving Maple ave. and St. Martin's st., by Barber Asphalt Co., \$7.13 and \$7.40, respectively; by Moellering Co., \$7.24 and \$7.63 ft.

**New Bedford, Mass.**—Excavating, grading and making walks for construction of two ponds at Brooklawn Park: B. F. Smith Construction Co.—Excavation, \$1 per cu. yd.; grading walks, 50c. per sq. yd.; concrete curbing, \$1.50, north pond; concrete curbing, \$1.90, south pond; concrete steps and overflow basin, \$268. Alexander A. Tripp—Excavation, 50c. cu. yd.; construction of walks and grading, 60c. sq. yd. Patrick McQuade—Excavation and grading, \$1.25 per cu. yd.; walks, 20c. sq. yd.; deep curbing, small pond, \$1.65; large pond, \$1.60 per lin. ft.; overflows, steps and drains, \$138. Napoleon Gregoire—Concrete curbing for ponds, steps and overflow

basins, \$4,700; excavating, grading and making walks, \$4,330. E. R. Taylor, Boston—Concrete curbing, \$2.04 per lin. ft.; overflow basins and steps, \$220. Simpson Bros. Corporation, Boston—Concrete curbing, \$3.36 per lin. ft., south pond; \$2.92, north pond; concrete steps and overflow basins, \$306. Benjamin F. Watkins—Concrete curbing, \$1.47 per lin. ft.; steps and concrete overflow basins, \$125; excavation, 47c. per cu. yd.; walks, 37c. per sq. yd. H. P. Converse Co., Boston—Excavating 60c. cu. yd.; construction of walks, 30c. sq. yd.; concrete curbing, \$2 per lin. ft.; concrete steps and overflow basins, \$616.

**Lestershire, N. Y.**—Improving Main st.: A. D. Osborne, Corning brick, \$1.81; Patterson brick, \$1.89; Bessemer brick, \$1.89; Clearfield, \$1.89½; Mack brick, \$1.98; Tyne & Willey, Corning brick, \$1.88; Patterson brick, \$1.94; Mack brick, \$2.14; Toronto brick, \$1.94; F. E. Whittemore, Mack brick, \$2.06; Patterson brick, \$2.04; Clearfield brick, \$2.04; Bessemer brick, \$2.03; Clymer brick, \$2.03. Curb and gutter: Reeder Constr. Co., 43c. per ft.; I. S. Decker, 50c.; Hervius & Dwyer, 53c.; A. D. Osborne, 50½c.; Trumposky & Stanta, 51c., and \$500 for removing walks and trees; F. E. Whittemore, 56½c., and \$950 for removing walks and trees; P. S. Mathews, 60c., and M. S. Hotchkiss, 56c., and \$742 for removing trees and walks.

**New York, N. Y.**—Repairing sheet asphalt pavements, Borough Manhattan—(a) 150,000 sq. yd. asphalt pavement, including binder course; (b) 500 cu. yd. Portland cement concrete; (c) 1,000 sq. yd. old stone pavement to relay; (d) totals: Barber Asphalt Co., (a) \$1.18, (b) \$7.70, (c) 58c., (d) \$176,430; Sicilian Asphalt Co., (a) \$1.20, (b) \$7, (c) \$1, (d) \$184,500; Uvalde Asphalt Co., (a) \$1.12, (b) \$6.90, (c) 75c., (d) \$172,200. Repair of asphalt block pavement, Manhattan, Harlem Contr. Co., lowest bidder, as follows: 20,000 sq. yd. new asphalt block pavement, \$1.63; 500 sq. yd. old asphalt block pavement, relaid, 60c.; 600 cu. yd. Portland cement concrete, mixed and laid, \$6.54, and 600 cu. yd. mortar bed, \$8.64; total, \$42,008; Barber Asphalt Co. bid \$44,785. Widening roadway and repaving with sheet asphalt with close binder on concrete foundation, 43d st. from Lexington ave. to 8th ave., except between Broadway and 7th ave. and south side, from 5th to 6th aves., Sicilian Asphalt Co., lowest bidder, 14,450 sq. yd. asphalt pavement, including binder course, except the railroad area, \$1.85; 1,720 sq. yd. asphalt pavement, including binder course in railroad area, no guarantee, \$1.65; 1,010 sq. yd. old stone blocks to be purchased and removed by the contractor, \$6; 3,040 cu. yd. Portland cement concrete, 85c.; 5,500 lin. ft. new bluestone curb, to be furnished and set, 40c.; 1,380 lin. ft. old bluestone curb, to be redressed, rejoined and reset, \$1.50; 50 lin. ft. platform flag to be cut to line, 30c.; 500 sq. ft. new cement sidewalk, 50c.; 500 cu. yd. filling to be furnished, \$20; 12 standard sewer heads and covers, complete, for sewer manholes, to be furnished and set, 75c.; 20 hydrants to be reset, \$250; 3 sewer catch-basins to be rebuilt with connections to sewers, 1c.; total, \$54,501. Totals of other bids: Uvalde Asphalt Co., \$58,713, and Barber Asphalt Co., \$58,282. Widening roadway and repaving with sheet asphalt with close binder on a concrete foundation, 34th st. from the west side of Madison ave. to the east side of 8th ave., Manhattan: Barber Asphalt Co., lowest bidder, 11,650 sq. yd. asphalt pavement, including binder course, except the railroad area, \$1.89; 1,370 sq. yd. asphalt pavement, including binder course, in railroad area, no guarantee, \$1.40; 2,460 cu. yd. Portland cement concrete, \$6; 4,360 lin. ft. new bluestone curb, 88c.; 1,460 lin. ft. old bluestone curb, reset, 43c.; 230 lin. ft. platform flags to be cut to line, \$1.50; 400 cu. yd. filling, 1c.; 400 sq. ft. new cement sidewalk, 30c.; 7 sewer basins, to be rebuilt with connections to sewers, \$250; 1 sewer basin, to be built with connection to sewer, \$300; 20 hydrants to reset, 65c.; total, \$47,980. Totals of other bids: Uvalde Asphalt Co., \$49,018; Sicilian Asphalt Co., \$48,705. Widening and repaving with wood block on concrete foundation, 34th st. from Madison ave. to 8th ave., the U. S. Wood Preserving Co., lowest bidder, 11,650 sq. yd. wood block pavement, including sand cushion, except the railroad area, \$2.57; 1,370 sq. yd. wood block pavement, including sand cushion, in the railroad area, no guarantee, \$2.57; 2,460 cu. yd. Portland cement concrete, \$5.85; 4,360 lin. ft. new bluestone curb, 85c.; 1,460 lin. ft. old bluestone curb, 40c.; 230 lin. ft. platform flags to be cut to line, \$1; 400 cu. yd. filling, 1c.; 400 sq. ft. new cement sidewalk, 20c.; 7 sewer basins rebuilt with connections to sewers, \$175; 1 sewer basin to be built, with connection to sewer, \$200; 20 hydrants to be reset, \$50; total, \$54,881. Totals of other bids: Barber Asphalt Co., \$62,622;

Republic Constr. Co., \$56,222, and Uvalde Asphalt Co., \$56,300. Widening roadway and repaving with wood block on a concrete foundation, 42d st. from Lexington ave. to 8th ave., except between Bway. and 7th ave. and south side from 5th to 6th aves., Republic Constr. Co., lowest bidder: 14,450 sq. yd. wood block pavement, including sand cushion, except railroad area, \$2.70; 1,720 sq. yd. wood block pavement, including sand cushion, in railroad area, no guarantee, \$2.70; 1,010 sq. yd. old stone blocks to be purchased and removed by the contractor, \$5; 3,040 sq. yd. Portland cement concrete, 90c.; 5,500 lin. ft. new bluestone curb, 30c.; 1,380 lin. ft. old bluestone curb, reset, \$1; 50 lin. ft. platform flags to be cut to line, 20c.; 500 sq. ft. new cement sidewalk, 1c.; 500 cu. yd. filling, \$15; 12 standard sewer heads and covers, complete, for sewer manholes, to be furnished and set, \$25; 20 hydrants reset, \$250; 3 sewer catch-basins rebuilt, 1c.; total, \$65,798. Totals of other bids: U. S. Wood Preserving Co., \$66,382; Barber Asphalt Co., \$75,542, and Uvalde Asphalt Co., \$69,323.

**Syracuse, N. Y.**—Constructing highways as follows: (a) Falks & Menzies, of Buffalo, (b) H. P. Burgard, of Buffalo, (c) Dale Engineering Co., of Utica, (d) Town of Lafayette, (e) Town of Pompey; Jamesville-Onatavia rd., 4.06 miles (d) \$18,857; (a) \$19,449. Oran-Cazenovia, 1.7 miles, (b) \$9,598; (e) \$9,312; (c) \$9,495. DeWitt-Cicero rd., 4.72 miles, (a) for Residium asphalt, \$18,539; Bermudez, \$19,195; Trinidad, \$19,851; (b) Residium, \$18,840; Bermudez, \$20,152; Trinidad, \$19,851; (c) Residium, \$18,995; Bermudez, \$20,350; Trinidad, \$20,350.

**Youngstown, O.**—Macadamizing Lipkey rd. and Rosemont rd. C. E. Clemens, lowest bidder, at \$15,026 for the former, and G. A. Galdini, at \$5,641 for latter.

**Superior, Wis.**—Paving North Fourteenth st. between Tower and Ogden aves with a permanent paving. Lowest bidders: Bitulithic macadam, P. McDonnell, \$3,403.48; brick, Peterson & Holm, \$3,495.40; sheet asphalt, P. McDonnell, \$2,991.08; creosote blocks, John Diffor, \$3,553.96.

## SEWERAGE

**Fort Smith, Ark.**—Council has adopted resolutions instructing Board of Public Affairs to employ competent hydraulic engineer, who shall thoroughly study local conditions and submit plans for solution of problems which confront city with relation to water and sewer question.

**Prescott, Ark.**—Bids will be received until Sept. 6 by Secretary of Board of Commissioners for 25,500 cu. yd. excavation, laying 49,000 lin. ft. of sewer pipe, and building of 120 manholes and sewer treating plant.

**Nogales, Ariz.**—Election will be held for purpose of voting on \$60,000 bond issue for construction of sewer system.

**Oakland, Cal.**—Mass meeting will be held to discuss sewer bonds.

**Winters, Cal.**—Sewer bonds to value of \$28,000 were purchased by N. W. Halsey & Co.

**Windsor, Conn.**—Meeting will be held Aug. 24 to organize district for purpose of constructing and maintaining sewers.

**Jacksonville, Fla.**—Ordinance has been passed for election on Sept. 5 for voting on bond issue for sewerage purposes.

**Tampa, Fla.**—Bids for construction of 8-in. sewer on Twiggs st. were rejected, and new bids will be advertised for to be received Aug. 14.

**Atlanta, Ga.**—Bids will shortly be asked for building intercepting sewer from Collier rd. to Peachtree Creek disposal plant.

**Quincy, Ill.**—Council has ordered construction of three sewers.

**Reinbeck, Ia.**—Plans are being prepared for complete sewer system.—R. B. Ferguson, Clerk. C. P. Chase, of Iowa Engrg. Co., Clinton, Engineer.

**Lawrence, Kan.**—Storm sewer will be built in west part of town between Louisiana and Mississippi sts.

**Donaldsonville, La.**—Bonds have been voted for to amount of \$175,000, for purpose of giving system of complete drainage to area of about 62,000 acres.

**Port Allen, La.**—Meeting has been held for discussing question of drainage and means of extending system in Parish of West Baton Rouge to Parish of Pointe Coupee. Election to issue bonds will be held.

**South Cumberland, Md.**—Installation of sewer on Race st. is being urged.

**Saginaw, Mich.**—Resolutions have been adopted for construction of sewers on Good st. from Holland ave. to Bristol st. and on High st. from Holland ave. to Emerson's addition.

**Hightstown, N. J.**—Plans are being made for sewer system to cost about \$35,000.

**Jersey City, N. J.**—Plans for constructing of trunk or intercepting sewer through

watershed of Jersey City water plant at Boonton are being discussed.

**Plainfield, N. J.**—Plans for facilitating cleaning of vaults and cesspools are being discussed by Board of Health.

**Binghamton, N. Y.**—Plans for sewage disposal plant and intercepting sewerage system have been approved of by State Department of Health; estimated cost, \$350,000.

**Middleport, N. Y.**—Installation of sewer system is contemplated.

**Winston-Salem, N. C.**—Citizens have voted \$350,000 bonds; \$85,000 will be used for sewerage.

**Akron, O.**—Ordinances have been passed providing for construction of sewers on Cole ave., Curtiss, Moore, Bartges and Moon sts.

**Oklahoma City, Okla.**—Property owners are petitioning for improved sanitary sewer district east of Kate st. on Eighth to carry off water from 9th, 10th and 11th sts.

**East Mauch Chunk, Pa.**—Citizens have petitioned to Council for sewerage system.

**Reading, Pa.**—Plans are being made for storm sewer system, to cost \$40,000, on Franklin and intersecting streets.

**Scranton, Pa.**—Ordinance is being considered providing for bond issue of \$54,000 for construction of five relief sewers in following districts: 10th district, at Prescott ave. and Mulberry st., \$22,000; 11th district, on Maple st., \$18,326.07; 6th district, on Electric st., \$4,486.55; Section "A," 5th district, on North Main ave. from West Market st. to river, \$1,861.44; Section "K," 17th district, on Crown ave., \$4,477.04; on North Main ave., from Oram boulevard to Lloyd st., \$2,848.90.

**Woonsocket, R. I.**—Ordinance has been passed providing for sewers on Paradis ave., Willow st., Manville rd., Maple and Davison sts.; estimated cost, \$10,180.

**Dallas, Tex.**—Bids are required for construction of storm sewer through Winnetka Heights; cost, \$12,000.

**Vancouver, Wash.**—Voters have authorized bond issue of \$100,000 for trunk sewer system.

### CONTRACTS AWARDED

**Little Rock, Ark.**—To Charles Turkis, for building of storm sewer, curbing, etc., in West 24th st., from High st. to Schiller ave., and on Schiller ave., from 24th to 25th sts.

**Los Angeles, Cal.**—By Bd. Public Works for sewerage Vermont ave., between Stauson ave. and 40th st., to Joe Chutch, at \$29,819; other bids as follows: W. F. Egger, \$40,995; Pete Tomich, \$36,395; M. S. Cummings, \$102,141; M. R. Fulmis, \$33,200; O. O. Farmer, \$47,100; John Balch, \$39,671.14; Peter Trobovach, \$33,900; John Radich, \$33,500; W. W. Hendricks, \$47,000; R. N. Nikcevic, \$39,000; J. Cristich, \$40,140; Mlagenovich & Gillespie, \$43,995; J. Mohan, \$38,000, and Geo. Wujachich, \$37,384.

**San Francisco, Cal.**—By Board of Public Works, for constructing section "M" of North Point main sewer, to Healy-Tibbitts Co., at \$81,000.

**San Mateo, Cal.**—By Board of Trustees for septic tank and sewers to J. A. Wilson for \$23,000, and construction of pumping station to United Sewer Works, of San Francisco.

**East Chicago, Ind.**—To F. G. Proudfoot, 1614 Unity Bldg., Chicago, Ill., for construction of sewer in Calumet-Kennedy addition, down Chicago and Grasselli aves.

**Evansville, Ind.**—By Board of Public Works, for construction of sewer on Louisiana st., to John L. Newman Co., and sewer on Block 6, Hopkins pl., to Anderson & Veatch.

**Leavenworth, Kan.**—By City, for laying sewer in east and west alley in Todd tract, to Fred Torry & Son.

**Wichita, Kan.**—To John Stiffler, by City, for construction of Section A of Douglas ave. storm water sewer, from Main st. west to Big Arkansas River, for \$10,029. Sewer will be constructed of two-ring hard-burned red brick, and will be 48 ins. in diameter at corner of Main st. and Douglas ave. and 54 ins. in diameter at its outlet.

**New Orleans, La.**—By City, for putting in subsurface drainage in St. Charles st. from Gravier to Poydras, to Barber Asphalt Co., at \$5,780.

**Boston, Mass.**—To Antony Cefalo, by the Public Works Department, for sewerage works in Johnston rd. and Harvard st., Dorchester, for \$5,307.

**Frankfort, N. Y.**—For putting in sewer system through village, by Sewer Commissioners, to John R. Baxter, Jr., of Utica, N. Y., for \$56,385.

**Yonkers, N. Y.**—By Board of Contract and Supply for construction of sewers in Montague st. and Montague place to O'Rourke Co. at \$14,400. Other bids as follows: McDonald & Murray, \$15,300; Charlton & Weston, \$14,674; Ferguson & Callahan, \$17,700; Joseph L. Cuzzo, \$17,-

179; Frank Cianfagione, \$18,000; Kelly & Hannifan, \$15,733; Russell & Canepi, \$21,000; Anthony Fischer, \$14,775.

**Cincinnati, O.**—For sewerage ravine between Reading road and Ridgeway ave. to Thomas Maloney at \$2,399.

**Cincinnati, O.**—For sewerage Virginia ave. and Washburn ave. to John E. Mahoney for \$6,258.

**Klamath Falls, Ore.**—By City Council, for construction of third unit of sewer system, to Thomas H. Simpson and E. E. Phipps, of Ashland, at \$12,067.

**Chester, Pa.**—By City Council, as follows: Pritchard & Oliver, for sewer on 9th st., from Edgmont ave. to Chester River, the prices being: 8-in. terra cotta, 90c.; 12-in. terra cotta, \$1.17; "Y's," 50c. and 65c.; manholes, \$39; rock, \$4.75.

**Chester, Pa.**—By City Council, as follows: John Hanna & Sons, for laying sewers on 8th st., Pusey to Lloyd st.; Franklin st., 2d to 3d; Welsh st., 8th to 9th st. Prices in each instance were same: 8-in. terra cotta, 95c. per lin. ft.; "Y's," 50c. each; manholes, \$39 each; rock, \$4.25 per cu. yd.

**Ligonier, Pa.**—To Ralston & Meyers, of Mt. Vernon, O., by Borough Council, for furnishing materials and constructing sewage pumping plant and sewage purification plant, for \$13,900.

**Portage, Pa.**—By City, for furnishing sewer pipe, to John W. Walters, of Johnstown.

**Norton, Va.**—To John Jenkins, by City, for work of completing 6½ miles of sewers, for \$21,322. Engineers Scarborough & Dotson, of Norton, are in charge of work.

**Seattle, Wash.**—By Board of Public Works, for construction of 11th ave. sewers, to Nelson & Carlson, at \$8,350, and for 66th st. sewers, to Dahlstrom & Rodal, at \$21,964.

**Ashland, Wis.**—By Board of Public Works, for construction of sewers in alley between 2d ave. West and Ellis ave., to Thomas Knudson, at \$3,965.

### WATER SUPPLY

**Fort Smith, Ark.**—Council has adopted a resolution instructing Board of Public Affairs to employ a competent hydraulic engineer who shall thoroughly study local conditions and submit plans for solution of the problems which confront city with relation to sewer and water question.

**Hemet, Cal.**—Municipal water works will be installed; probable cost, \$50,000.

**Pittsfield, Ill.**—Plans for water works system will probably be made shortly.

**Virden, Ill.**—Council has approved of appropriation of \$60,000 for water works system.

**South Bend, Ind.**—Plans for improvement of city water works system are contemplated.

**Council Bluffs, Ia.**—Plans are being prepared for high pressure electric pump to be installed in Broadway station, and bids will shortly be advertised; estimated cost, \$30,000.

**Fort Dodge, Ia.**—Bids will be readvertised for sinking city well to depth of 2,000 ft.

**Pittsburg, Kan.**—City has voted \$225,000 for purchase of water plant and \$40,000 to improve and extend same.—L. E. Curfman, C. E.

**Monroe, La.**—Plans are being prepared by city engineer for laying of larger water mains and extension of lines to cover entire city limits; estimated cost, \$75,000.

**Biddeford, Me.**—Residents of Cornish are considering installation of water works.

**Hagerstown, Md.**—Washington County Water Co. will build reservoir near Smithsburg.

**Lowell, Mass.**—Water Department is about to install new wells on boulevard; estimated cost for wells, reservoir and pumping station, \$100,000.

**New Bedford, Mass.**—Petitions for extension of main pipe have been received as follows: Tarklin Hill rd., from present terminus 23 ft. west of Bowditch st., west 95 ft. Felton st., from present terminus 322 ft. south of Wood st., south 70 ft. Grand st., from present terminus 751 ft. west of Shawmut ave., west 400 ft. to Whitlow st.; thence in Whitlow st., from Grand st. south 681 ft. to Durfee st. Penniman st., from Mt. Pleasant st. east 118 ft. Mill st., from present terminus 107 ft. west of Newton st., west 48 ft. Rotch ave., from present terminus 123 ft. north of Arnold st., north 54 ft. Bellevue st., from Brock ave. west 337 ft.

**Flint, Mich.**—The Bd. of Water Comrs. will probably decide to lay about 12 miles of mains, to cost about \$140,000.

**Reed City, Mich.**—Citizens have voted \$5,000 bonds to improve water system.

**Carlton, Minn.**—Installation of water works and sewer system is contemplated.

**Swanville, Minn.**—Voters have decided on proposition of bonding town for \$7,500

for purpose of putting in water works system and other improvements.

**Cascade, Mont.**—Installation of water works system is contemplated.

**Arkport, N. Y.**—Plans are being considered for installation of water works system.

**Middleport, N. Y.**—Preliminary survey of proposed water system is now in progress; estimated cost, \$45,000.

**Yonkers, N. Y.**—National Board of Fire Underwriters has recommended need of additional water supply.

**Winston-Salem, N. C.**—Citizens have voted \$350,000 bonds; \$40,000 will be used for water works improvements.

**Rawson, O.**—Installation of water works to cost \$16,000 will be voted on.

**Gladstone, Ore.**—Installation of water works to cost \$20,000 is contemplated.

**Klamath Falls, Ore.**—Council is considering installation of water system to cost about \$1,000,000.

**Woodburn, Ore.**—Election will be held early September for voting on municipal ownership of local water works.

**West Reading, Pa.**—Establishment of municipal water plant is being considered.

**Nocona, Tex.**—Bonds to value of \$17,500 for water works have been approved.

**Paris, Tex.**—Election will be held Sept. 5 for voting of \$35,000 bond issue for purpose of improving and increasing water supply at city lake.

**Sherman, Tex.**—Water works system will be installed.

**Harrisonburg, Va.**—Town Council has passed motion to build \$20,000 filtration plant on southern suburbs.

**Richmond, Va.**—G. C. White, Durham, N. C., has been engaged for engineering work connected with extension of water works; cost about \$250,000.

### CONTRACTS AWARDED

**Mena, Ark.**—To Tonkawa Construction Co., of Tonkawa, Okla., for water works construction from plans of Winters & Dove, of Fort Smith; cost, \$38,000.

**Kingsbury, Cal.**—Braun, Williams & Russell, of San Francisco, for construction of water works for \$19,447.

**San Francisco, Cal.**—By Board of Public Works, for steel tank with capacity of 500,000 gals., to F. C. Roberts & Co., at \$12,350.

**Brighton, Col.**—By Town Council, to Peter O'Brien, of Denver, for 9,000 ft. of extensions to mains of town water system, to be finished this fall. Bonds amounting to \$10,000 were recently authorized for this improvement.

**Washington, D. C.**—By Commissioners, for supplying of two Wilcox trucks to water department, to Congressional Garage Co., at \$27.50 each.

**Americus, Ga.**—Construction of a reinforced concrete reservoir 60 ft. diam. and 13 ft. deep to A. J. Wardrop, of Knoxville, Tenn., as follows: 1,570 cu. yds. earth excav., 60c., and reinforced concrete reservoir, 60 x 13 ft., with reinforced concrete roof, \$3,840; total, \$4,782. Total of other bidders: Pearson Constr. Co. Dothan, Ala., \$6,440; Americus Tile & Artificial Stone Co., Americus, \$5,792; Crox & Hollahan, East Chattanooga, Tenn., \$5,652, and Geo. H. Crafts & Co., Dublin, \$5,452.

**Springfield, Ill.**—By City Comrs. for 10,000,000-gal pump to Holly Mfg. Co., of Buffalo, N. Y., for \$49,769.

**Malden, Mass.**—By City, for 200 tons of 8 and 12-in. pipe, to U. S. Cast Iron & Fdry. Co. Bids were as follows: Donaldson Co., 8-in. \$22.79, 12-in. \$21.90; John Fox & Co., 8-in. \$22.30, 12-in. \$22.30; F. A. Houdlette, 8-in. \$21.85, 12-in. \$21.85; C. Millar Son Co., 8-in. \$22.90, 12-in. \$22.90; U. S. Cast Iron & Fdry. Co., 8-in. \$21.70, 12-in. \$21.70; R. D. Wood & Co., 8-in. \$22.45, 12-in. \$21.70.

**Flint, Mich.**—By Common Council, to Pittsburgh Filter Mfg. Co., of Pittsburgh, for construction of filter plant at city water works. Contract price is \$138,895. Contract calls for eight filter beds with ordinary capacity of 1,000,000 gals. a day each.

**Brainard, Neb.**—By Village, for putting in system of water works and rebuilding electric light plant, to Almo Engine & Supply Co., of Omaha, Neb., for \$10,713. Water works plant is to be of air pressure style with two engines.

**Bridgeton, N. J.**—By City Council, for water filtration works and pumping station as follows: Building and filters, to Atlantic Construction & Supply Co., at \$38,864; filter equipment, to Pitt Construction Co., at \$13,500; pumping engine, to Platt Iron Works, at \$8,475; water tube boilers, to Frank Toomey, at \$4,485; chimney, to Alphons Custodis Co., at \$2,175.



**Somerset, Pa.**—By Town Council, for pump, to Platt Iron Works, of Pittsburgh, at \$2,325.

**Aiken, S. C.**—To Guild & Co., Chattanooga, Tenn., by Board of Public Works, for laying of water main and materials, for \$13,998. Mains will be 14 in. in diameter and will extend about 6 3/4 miles.

**Onida, S. D.**—By city to Des Moines Bridge & Iron Co., of Des Moines, Ia., for constructing water works at Onida.

**Christiansburg, Va.**—To Wm. R. Reynolds, 346 W. 55th pl., Chicago, Ill., by City, for construction of water works, for \$34,000.

**Rice Lake, Wis.**—By Bd. of Pub. Wks. for water extension to Hays & Co., of Minneapolis, Minn., as follows: 6,310 ft. c. i. water pipe, 22 lbs. to the ft., \$27.75 per ton; 2,390 ft. c. i. water pipe, 33 lb. to the ft., \$25.60 per ton; castings, 2 1/2 c. per lb. All f.o.b. cars Rice Lake.

**Cowley, Wyo.**—By Town Council, to G. Jaeger, of Rich Hill, Mo., for construction of proposed water system.

### BIDS RECEIVED

**Jacksonville, Fla.**—Driving a 1,000-ft. 10 or 12-in. artesian well on park property, located near the banks of Hogan's Creek, between 4th and 5th sts.: Ohio Well Drilling Co., Jacksonville, 10-in., \$3.23 per ft.; 12-in., \$4.32 per ft.; Southard Contracting Co., Lakeland, 10-in., \$3.49 per ft.; 12-in., \$3.74 per ft.; Snyder Pump & Well Co., Richmond, Va., 10-in., \$3.25 per ft.; 12-in., \$4.25 per ft.; Hughes Specialty Well Drilling Co., Charleston, S. C., 10-in., \$4 per ft.; 12-in., \$5 per ft.

**Athol, Mass.**—Furnishing 300 tons of 12-in. c. i. pipe; (a) straight pipe per ton, (b) special castings per hundred lbs.; Standard Cast Iron Pipe & Fdry Co., (a) \$22.70, (b) \$2.45; Chas. Millar Son Co., (a) \$23.40, (b) \$2.50; Warren Foundry & Mch. Co., (a) \$27.40, (b) \$2.30; U. States Cast Pipe & Fdry. Co., (a) \$21.95, (b) \$50 per ton; John Fox & Co., (a) \$22.75, (b) \$2.50; Florence Iron Works, (a) \$22.15, (b) \$2.50.

**Malden, Mass.**—By Street and Water Commission for fire hydrants and valves: Kennedy Co., hydrants, \$24 to \$29; valves, \$10.25 and \$8.50; Fairbanks Co., hydrants, \$31.80; valves, \$8.40; Tenney Morse, valves, \$8.21 and \$9.90; Chapman Co., hydrants, \$27.06, \$31.10 and \$36; valves, \$10.35; Ludlow Co., hydrants, \$38.80; valves, \$11.90; Davis & Darling, hydrants, \$30.50; valves, \$11.50.

**Flint, Mich.**—Building filter plant and pumping station from plans of Wm. G. Clark, Spitzer Bldg., Toledo; bid of Pittsburgh Filter Mfg. Co., Pittsburgh, Pa., recommended for award, is as follows: Excavation and grading, \$12,800; concrete, \$52,800; brickwork, \$6,500; steelwork, \$2,850; carpenter and mill work, \$4,700; roof, \$575; galvanized iron and sheet metal, \$500; stonework, \$3,000; plastering, \$120; heating, \$925; drainage, \$3,700; intake, \$1,250; suction well, \$1,350; intake conduit, \$6,280; lighting, \$800; sluiceways, \$2,400; piping, \$2,000; filter equipment, \$31,000; chemical devices, \$3,100; extra excavation 50 cu. yds., \$75, and extra concrete, 20 cu. yds., \$170; total cost, \$136,895.

**New York, N. Y.**—By Board of Water Supply for Contract 167, calling for furnishing and delivering certain apparatus and materials at designated localities and furnishing, delivering and installing certain other apparatus and materials in various structures along Catskill aqueduct, in Ulster and Putnam Counties, and in the Borough of Brooklyn; apparatus and material consist of 233 6-in. to 54-in. gate-valves, 2 40-in. blowoff valves, 2 hydraulic cylinders for 40-in. blowoff valves, 4 hydraulic cylinders for 54-in. gate-valves, bronze and cast-iron piping and miscellaneous appurtenances; Chapman Valve Mfg. Co., of Indian Orchard, Mass., lowest bidder with total of \$121,629. Other bidders: A. P. Smith Mfg. Co., East Orange, N. J., \$124,577; Pittsburgh Valve, Fdry. & Constr. Co., Pittsburgh, Pa., \$131,656; Kennedy Valve Mfg. Co., Elmira, N. Y., and 57 Beekman st., New York City, \$139,701; and Coffin Valve Co., Boston, Mass., \$150,148; furnishing, delivering and laying water mains and appurtenances and removing existing mains and appurtenances in Lewis and Reid aves., Borough of Brooklyn: Walton Constr. Co., \$30,112; Nelson & Dowling, \$23,948; H. E. Fix, \$24,090; R. Williams, \$28,970; Beaver Eng. & Contr. Co., \$23,578; Murphy Bros., \$27,042; and Robt. Carter Co., \$26,266; also (a) pipe, per ton, (b) specials per ton: Warren Fdry. & Machine Co., (a) \$24.50, (b) \$50 and \$52; Florence Iron Works, (a) \$21.74 and \$21.69, (b) \$46.49 and \$46.30; John Fox & Co., (a) \$22.40 and \$21.90, (b) \$45.70; United Cast Iron Pipe Fdry. Co., (a) \$21.70, (b) \$47; Standard Cast Iron Pipe & Fdry. Co., (a) \$21.95 and \$21.50, (b) \$44.50 and \$43.70.

### LIGHTING AND POWER

**Alameda, Cal.**—Council is considering election on \$115,000 bonds of electric light plant including \$25,000 for building, \$75,000 for additional rent and \$15,000 for wiring.

**Los Angeles, Cal.**—Council is considering sale of \$500,000 power bonds.

**Roseville, Cal.**—Petition is contemplated asking Trustees to proceed with establishment of independent municipal lighting system.

**Sacramento, Cal.**—Plans are complete for proposed new lighting system for Capital Park, and bids will shortly be opened; estimated cost of system, \$13,000.

**San José, Cal.**—Plans are being considered for installation of light and power system.

**Vallejo, Cal.**—Bond issue for municipal lighting plant is contemplated.

**Tampa, Fla.**—Work is shortly to begin on the huge gas tank which the Tampa Gas Co. is preparing to construct to take care of the enlarged system of mains now being laid throughout the city; tank will have capacity of 750,000 cu. ft.

**Tampa, Fla.**—City Council has ordered placing of 40 gas lights in Morrison Grove subdivision, provided Tampa Gas Co. will lay 24,000 ft. of gas mains in that district.

**Dalton, Ga.**—Georgia Power Co. has asked for 30-year franchise to bring their lines into Dalton.

**Paxton, Ill.**—City will construct \$17,000 electric light plant, having authorized issuance of bonds for construction and purchase of machinery.

**Jonesboro, Ind.**—Franchise let to Marion Light & Heating Co. for furnishing street and private lighting will expire next November, and citizens are discussing terms on which new franchise should be let.

**Des Moines, Ia.**—City is considering taking over electroliner lighting system.

**Owensboro, Ky.**—City Council will enlarge electric light plant at cost of several thousand dollars.

**St. Paul, Minn.**—Installation of 1,000 arc lamps has been decided.

**Billings, Mont.**—Ordinance has been passed providing for decorative lighting.

**Bloomfield, N. J.**—Consulting Engineers Runyon & Carey have recommended installation of municipal street lighting plant, which also provides for commercial lighting.

**Beaver Falls, N. Y.**—Installation of pillar lighting system on 7th ave. between 11th and 12th sts. has been decided.

**Binghamton, N. Y.**—Owing to technicality, Board of Contract and Supply will ask new bids for lighting.

**Newburgh, N. Y.**—Merchants' Association is urging installing of ornamental lighting system in Colden and Water sts.

**Fargo, N. D.**—Council has ordered City Engineer Anders to prepare plans for electric light plant.

**Somerset, Pa.**—Town Council has rejected bids submitted for erection of power house for water plant, and are contemplating construction of power house independent of contractor.

**Woonsocket, R. I.**—Resolutions providing for street lights on Allen st., 6th ave., East Orchard st. and Woodland rd. have been recommended by Street Lights Committee.

**Columbia, S. C.**—Camden Water & Light Co. has been commissioned by Secretary of State, with capital stock of \$70,000. Company proposes to do general electric light and power business.

**Kennedy, Tex.**—City Commissioners have granted electric light franchise to J. D. Antry and D. D. McCada.

**Bountiful, Utah.**—Representatives of Bountiful, Farmington and Kaysville are contemplating purchasing electric light plant.

**Charlottesville, Va.**—Election will be held Sept. 5 for voting on \$26,000 bond issue for gas improvements.

### CONTRACTS AWARDED

**Holyoke, Mass.**—By Board of Public Works, for construction of steam plant at city farm, to Lynch Bros., at \$2,650. Other bids as follows: D. O'Connell & Sons, \$2,666; F. J. Curley, \$2,875; Liberte Bros., \$3,295; and L. Carreau & Sons, \$3,800.

**Brainard, Neb.**—By Village, for rebuilding electric light plant, to Almo Engine & Supply Co., of Omaha, Neb.

**Franklin, Pa.**—Installing eight 14-ft. posts in park for lighting purposes, to Franklin Electric Co.

**Somerset, Pa.**—By Town Council, for boiler, to Titusville Iron Works, at \$1,395.

**Wilkes Barre, Pa.**—Lighting streets for three years to Welsbach Co.

### BIDS RECEIVED

**Wilkes Barre, Pa.**—Lighting streets: From the Wilkes Barre Light Co., new concern, viz.: First year free of cost; three years' contract—first year free of cost; second and third year, \$25 per standard per year; five years' contract—first year free of cost; second, third, fourth and fifth years, \$18 per standard per year. From the Wilkes-Barre Co., old concern: One-year contract—\$45 per standard per year; three-year contract—\$40 per standard per year; five-year contract—\$35 per standard per year; both companies agree to illuminate the fountain free of cost. The Wilkes Barre Co. also states in its bid that it will agree to pay city \$500 for the privilege of taking present insulated wire from underground conduits and replace same with lead encased wire.

### FIRE EQUIPMENT

**Birmingham, Ala.**—Fire department will purchase six additional fire-fighting automobile trucks.

**Helena, Ark.**—New fire station will be erected.

**Alameda, Cal.**—Council is considering election on \$7,500 bonds for fire alarm system and \$6,500 for fire truck, also \$30,000 for auto fire apparatus.

**Los Angeles, Cal.**—Fire Commissioners have recommended purchase of auto fire truck for service in Garvanza section.

**Wilmington, Del.**—Washington Fire Co. will purchase automobile chemical engine.

**Macon, Ga.**—City is contemplating purchase of additional auto apparatus to cost \$26,000.

**Boise, Idaho.**—Bids are being advertised for 65-ft. aerial truck, motor-propelled, and 50-box fire alarm system.

**Caldwell, Idaho.**—City Council is contemplating purchase of combination automobile truck.

**Coeur D'Alene, Idaho.**—City is about to purchase another auto fire engine.—J. H. O'Rourke, Fire Chief.

**Freeport, Ill.**—City is contemplating purchase of additional fire equipment from Rockford department.

**Burlington, Ia.**—City will purchase new engine for fire department.

**Mason City, Ia.**—Fire station will be erected on 5th st. to cost between \$50,000 and \$75,000.

**Lake Charles, La.**—City Council will purchase fire engine and chemical engine; cost, \$10,900.

**Monroe, La.**—Automobile hose truck and chemical engine for Fire Department will shortly be purchased.

**White Castle, La.**—Fire department will dispose of hose wagon, and will purchase new hose.

**Bangor, Me.**—Council has voted to purchase additional fire apparatus for fire department, including a new aerial truck with hose tower connections.

**Saginaw, Mich.**—Fire Department recommends purchase of five fire engines and installation of direct pressure system of water works.

**Reno, Nev.**—Fire chief plans several improvements to fire department.

**Deal Beach, N. J.**—Fire house to cost \$7,000 will be erected.

**Rockwell Springs, N. Y.**—Plans are being discussed for erection of concrete fire house and purchase of chemical and water wagon.

**Saranac Lake, N. Y.**—Engine house to cost \$11,000 will be erected.

**Yonkers, N. Y.**—National Board of Fire Underwriters has recommended need of more hose and modernizing of fire alarm system.

**Athens, O.**—Bonds to value of \$2,500 will be sold for purpose of erecting and equipping fire department building.

**Marion, O.**—Fire station to cost \$22,500 will be considered.

**Darby, Pa.**—Fire company is considering plans for proposed new home.

**Dauphin, Pa.**—Improvements to fire system are contemplated.

**Ellwood City, Pa.**—Election will be held for voting on \$15,000 bond issue for purpose of erecting fire department building.

**Liberty, Pa.**—Fire Department will purchase combination electric fire engine and hose auto truck.

**Shamokin, Pa.**—City is contemplating substitution of auto fire trucks to replace present horse equipment.

**Narragansett, R. I.**—Council will purchase fire engine for pier district.

**Florence, S. C.**—Fire department will make improvements to cost about \$7,500.

**Everett, Wash.**—Fire department is considering purchase of automobile fire apparatus.

**Tomah, Wis.**—Fire and police alarm system will be installed and new equipment purchased for fire station.

## CONTRACTS AWARDED

**Louisville, Ky.**—For furnishing and equipping room for central station fire alarm system in City Hall annex to Moody-Mitchell Building & Lumber Co. at \$11,258.22.

**Saranac Lake, N. Y.**—By Village Board for building fire house on Broadway to McCormick & Duffin; plumbing and heating will be installed by Amnot & Donohue, and wiring by John K. Beardsley. McCormick & Duffin's bid for erection of building, with concrete foundation wall and slag roof, was \$10,465; for plumbing, Amnot & Donohue bid \$426 and for heating \$527, and for wiring John K. Beardsley bid \$59.50, (which will make the total cost of building \$11,477.50. Other bids as follows: Branch & Callanan bid \$11,527 for erection of building, with \$154 off if slag roof and \$100 off if concrete wall instead of tin roof and stone wall were used; J. J. O'Connell's bid was \$12,223.21, with \$175 off for concrete wall and \$140 off for slag roof, and McKenna & Slater bid \$11,500, with \$135 off for slag roof. Adirondack Hardware Co. offered to do plumbing for \$520, heating for \$699 and wiring for \$74.50. Walton & Tousey bid on plumbing \$515 and on heating \$660. J. H. Bogan bid \$689.04 on heating plant, and Ruser & Muller bid \$68 on wirings.

**Sioux Falls, S. D.**—Construction of basement walls and the concrete floor for proposed new fire station to the Velten, Tuers, Sanan Co. for \$5,567.

## BIDS RECEIVED

**Louisville, Ky.**—Finishing the room to be occupied by the central station fire alarm headquarters: Bailey & Koerner, \$14,195; Joseph Bicker, \$12,430; Alfred Struck Co., \$11,800; Moody-Mitchell Lumber & Building Co., \$11,258.22. The bid of the Frey Planing Mill Co. was \$10,210, but it was not itemized, and not submitted in accordance with the specifications.

**Lowell, Mass.**—For erection of fire house at Merrimack and Race sts., as follows: Daniel H. Walker, \$18,200; William H. Penn, \$17,718; William Drapeau, \$20,880; Connors Bros. Co., \$21,799; Patrick Conlon, \$18,575; C. P. Conant, \$18,771; James Whittet, \$18,842; B. H. Wiggin, \$18,770; P. O'Hearn, \$18,798; E. G. Towhey, \$16,448; T. W. Johnson, \$18,266.

## BRIDGES

**Oroville, Cal.**—Supervisors have decided not to construct stone bridge across Feather River, but to erect \$80,000 steel structure.

**Columbus, Ga.**—Construction of viaduct connecting Wynnton to Columbus under six or seven railroad lines on 11th st. is contemplated.

**Rome, Ga.**—County Board of Commissioners has authorized County Engineer to construct and rebuild bridges throughout county.

**Waycross, Ga.**—Construction of bridge across Altamaha is being considered.

**Muncie, Ind.**—County Commissioners have rejected bids for construction of seven bridges in county. Bids will be re-advertised.

**Lake Charles, La.**—Construction of bridge across Calcasieu River is being considered. Roadway, single-track street railway, 100-ft. draw. T. H. Mandell, C. E.

**Vicksburg, Miss.**—William Brown has purchased \$2,400 bridge bonds.

**Somerville, N. J.**—Appropriation of \$180,000 has been made by Somerset County Board of Freeholders for bridge and road building.

**Barberton, O.**—New fire apparatus to cost \$8,900 will be installed.

**Portland, Ore.**—Plans are being prepared for second approval to Broadway bridge on East Side; estimated cost, \$12,000.

**Harborcreek, Pa.**—Plans have been prepared by Rogers Bros., of Albion, for viaduct across Kane's Gulf, between Harborcreek and Greene Townships; estimated cost, \$20,000.

**Middletown, Pa.**—County Commissioners are considering erection of \$10,000 aqueduct bridge, crossing Swartara Creek, between this city and Royaltown.

**Pittsburgh, Pa.**—Plans for bridge to connect Northside and McKees Brooks have been adopted; estimated cost, \$1,500,000.

**Woonsocket, R. I.**—City is contemplating construction of bridge over Blackstone River on Bernon st. and repairs to Court st. bridge; estimated cost of new bridge, \$36,000.

**Sioux Falls, S. D.**—Erection of reinforced concrete bridge over Sioux at 8th st. is contemplated.

**Houston, Tex.**—City Official's have under consideration construction of new bridge to replace old drawbridge over Bayou at San

Jacinto st. New structure will be concrete arch instead of draw.

**Salt Lake City, Utah.**—Construction of viaduct on 5th South st. new, and one on 7th South st. within two years is contemplated.

**Janesville, Wis.**—Bridge bonds of \$26,675.30 value have been disposed of by City Treasurer.

**Milwaukee, Wis.**—Petition is being considered for erection of bridge across Milwaukee River at Mason st.

**Heathcote, Ont., Can.**—For concrete bridge to be erected at Heathcote to A. Cooper & Bros., Coalingwood, \$1,125.

## CONTRACTS AWARDED

**Washington, Ariz.**—For construction of bridge across Little Colorado River, to Midland Bridge Co., of Kansas City, Mo., at \$84,000.

**Atlanta, Ga.**—For alterations of concrete tunnel under the A., B. & A. R.R., to G. H. Bray, at \$1,895.

**Boise, Idaho.**—By Commissioners of Ada County, for construction of 10 bridges, to Missouri Valley Bridge & Iron Co., Leavenworth, Kan., at \$19,000.

**Amboy, Ill.**—By Committee of Supervisors of Lee County and Highway Commissioners of East Grove Township, for construction of three steel bridges in East Grove Township to Stitzel & Harvey, Dixon, Ill., at \$7,600.

**Hillsboro, Ill.**—For construction of reinforced concrete bridge and removing old steel structure, to Dailey & Beckenreimer, St. Louis, Mo., at \$2,725.

**Kankakee, Ill.**—For construction of concrete bridge over Soldier Creek on Dearborn ave., by Board of Public Works, to Harry McMullin, at \$1,348.

**Metropolis, Ill.**—To J. L. Cox, of Murphysboro, Ill., by Town, for construction of two concrete reinforced bridges, for \$5,300. Work includes one bridge of two 40-ft. spans and one bridge of one 40-ft. span, each having a 16-ft. roadway.

**Port Byron, Ill.**—To Clinton Bridge Co., of Clinton, Ia., by Town, for construction of one reinforced concrete bridge in Coe Township, Rock Island County, as follows: Sample Bridge—Span, 20 ft.; roadway, 16 ft.; finished roadway to bottom of footings, 11 ft.; wings, 12 ft. long. Estimated amount of concrete in structure, 76 cu. yd.; reinforcing steel, 4,261 lbs.

**Indianapolis, Ind.**—By County Commissioners, for construction of bridge near Acton, to Charles Hoover, at \$1,335.

**Vincennes, Ind.**—By County Commissioners for construction of five bridges to Vincennes Bridge Co., and one bridge to James F. Hopkins.

**Salem, N. J.**—By Council, for erection of concrete bridges on new State road from Salem to Woodstown, to Owego Bridge Co. and Councilman Steelman, of Salem.

**Massena, N. Y.**—By Town, for construction of two-span, concrete, steel arch bridge, Melan System, to Pratt & Phillips, of Watertown, at \$27,625.34.—Mr. B. S. O'Neill is Town Supervisor. Concrete Steel Engineering Co., of New York, are Designing and Consulting Engineers.

**Klamath Falls, Ore.**—By County Court, for constructing bridge across Klamath River, to Confer Bros., for \$1,414.30.

**Pittsburgh, Pa.**—For construction of substructure of proposed steel bridge over Monongahela River near New Geneva, Pa., by County Commissioners of Allegheny County, to McMinamim & Simms, Arcade Bldg., Philadelphia, Pa.

## BIDS RECEIVED

**Chicago, Ill.**—Work on the substructure of the West Washington st. bridge: Fitzsimmons & Connel Co., low with bid of approximately \$110,000; Great Lakes Dredge & Dock Co. bid \$120,000; Marquette Construction Co., \$126,000, and John J. Gallery, \$140,000; Scherzer Rolling Bridge Co. also made offer on the bridge, but it was not accompanied by certified check, and not in accordance with specifications, consequently will not be considered by the city.

## MISCELLANEOUS

**Birmingham, Ala.**—City is contemplating erection of crematory.

**Ensley, Ala.**—City is considering purchase of 15 acres, including two springs, known as McWilliams Springs, for making park.

**Alameda, Cal.**—Council is considering \$15,000 bond issue for municipal wharf and \$12,000 for playgrounds and parks.

**Berkeley, Cal.**—Commissioner of Public Works is preparing preliminary plans for garbage crematory; probable cost, \$60,000.

**Los Angeles, Cal.**—Council is considering sale of \$500,000 harbor bonds.

**Los Angeles, Cal.**—City Council has been petitioned to grant permission for expenditure of \$7,500 for playground at Exposition Park.

**Pacific Grove, Cal.**—Architects and builders have been asked by City Board of Trustees for plans for city hall to be erected at Laurel and Forest aves.; estimated cost, \$9,500.

**Vallejo, Cal.**—Three bond issues will likely be submitted to people to finance municipal rock quarry, municipal lighting plant and new city hall.

**Manchester, Conn.**—Installation of police signal system is contemplated.

**Jacksonville, Fla.**—Erection of two-story reinforced concrete and brick office building on Main and Orange sts. for engineering department has been decided on; estimated cost, \$35,000 to \$40,000.

**East St. Louis, Ill.**—Sanitation Committee of Council is considering question of letting contract for collection and disposal of garbage.

**Richmond, Ind.**—City Council has taken preliminary steps in making city park by authorizing purchase of 28 lots for \$5,500.

**South Bend, Ind.**—Joseph T. Elliott & Sons were successful bidders for \$20,000 worth of general purpose bonds.

**Topeka, Kan.**—Shawnee County and Topeka City will at once make preparations for erection of public detention hospital or pest house near Topeka, construction and equipment of which will cost from \$8,000 to \$10,000.

**New Orleans, La.**—City Engineer W. J. Hardee is preparing plans to build seawall and parkway from West End to Spanish Fort.

**Brockton, Mass.**—Public comfort station, to cost \$10,000, will be erected on city hall lot.

**Haverhill, Mass.**—Municipal Council is contemplating erection of city hospital.

**South Omaha, Neb.**—Council has sold \$15,000 bond issue.

**Ocean City, N. J.**—George S. Fox Sons, of Philadelphia, were highest bidders for city's bond issue of \$50,000, and they received the award.

**Utica, N. Y.**—Board of Works will ask bids on contracts for street sweeping, removal and collection of garbage and removal of ashes and rubbish; contracts expire Oct. 1.

**Yonkers, N. Y.**—R. V. Aderente and A. E. Foringer, New York, have won competition for best designs for mural decorations for city hall.

**Winston-Salem, N. C.**—Citizens have voted \$350,000 bonds; hospital will be erected and other improvements made.

**Cincinnati, O.**—Council Committee will recommend ordinance providing for bonds of \$30,000 for needed repairs to buildings at branch tubercular hospital.

**Norwood, O.**—Erection of city hall is being considered.

**Muskogee, Okla.**—Election will be held Aug. 26 for voting on issuance of \$500,000 of bonds to erect ten-story county and municipal building.

**Philadelphia, Pa.**—City will erect single-deck pier at Dock st. to cost \$250,000.

**Providence, R. I.**—Ordinance has been passed providing for purchase of Fort Independence for park purposes.

**Greenville, S. C.**—Citizens have defeated \$100,000 bond issue for erection of court house; new election is urged.

**Summerville, S. C.**—Citizens are interested in proposition to dig canal from Summerville to Dorchester Creek for drainage purposes.

**Nashville, Tenn.**—Bill will be introduced authorizing appropriation of \$25,000 for purpose of making historic spots on battlefield at Nashville with metal tablets.

**Spokane, Wash.**—Bids will be received until noon, Sept. 4, by City Auditor, for purchase of \$50,000 local improvement working bond issue.—Jas. McGougan, City Auditor.

**Racine, Wis.**—Common Council will purchase lake shore park property below Hotel Racine for \$15,000 and make public park.

## CONTRACTS AWARDED

**New Bedford, Mass.**—By Park Commission, for restoring Lucas house at Hazelwood Park, to James J. Moore, at \$7,899.

**Buffalo, N. Y.**—Edward M. Graves, of Cleveland, who had contract with the city for Buffalo river improvement as far as Abbott rd., has served notice on the Commissioner of Public Works that he had elected to cancel contract under clause by which that privilege was given him in the event of his inability to get his dredging plant past the Lake Shore bridge when work reached that point.

**Sioux Falls, S. D.**—For construction of walls and reinforced concrete floor of central fire station, to Sioux Falls Construction Co., at \$5,890.



## TOO LATE FOR CLASSIFICATION

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>STREET IMPROVEMENTS</b>				
New Jersey	Elizabeth	Aug. 18, 8 p.m.	Constr. about 3,250 lin. ft. bluestone curbing on West side North Broad street.	Twp. Engr. Broad St.
Virginia	Portsmouth	Aug. 18	Constr. combined curb and gutter on Pearl street.	W. E. Henry, Chairman.
Ohio	Wooster	Aug. 19	Grading and paving with brick 1.52 miles road, cost \$18,710.	County Commissioners.
Pennsylvania	Reading	Aug. 19, noon	Regulating, grading and paving with vit. block pavement on concrete foundation, a number of alleys.	F. P. Heine, Secretary.
Indiana	Terre Haute	Aug. 19, 11 a.m.	Constructing 2,903 ft. gravel road.	N. G. Wallace, County Auditor.
New York	New York	Aug. 21, 2 p.m.	Regulating, paving and otherwise improving various streets.	Geo. McAneny, Boru. President.
Pennsylvania	Erie	Aug. 21, 2 p.m.	Grading, curbing and surfacing with cinders West 12th street.	H. G. Evans, Secy. Rd. Superv.
Iowa	Clarinda	Aug. 21, 7:30 p.m.	Constructing 15,000 sq. yds. concrete paving.	C. W. Stuart, City Clerk.
Pennsylvania	Wilkes Barre	Aug. 21 noon	Grading, curbing and paving Horton St. with sheet asphalt, vit. brick, belgian block, and cobble stones; curbing with stone or concrete.	City Clerk.
New Jersey	Jersey City	Aug. 22, 8 p.m.	Grading Montgomery Park and placing Boulders.	A. T. Hastings, Jr., Secy. Tree Com.
Iowa	Des Moines	Aug. 23, 9 a.m.	Paving several streets with sheet asphalt.	James R. Hanna, Mayor.
New York	Brooklyn	Aug. 23, 11 a.m.	Regulating, curbing and paving with asphalt on a concrete foundation several streets.	Borough Pres. Steers.
New York	Binghamton	Aug. 30	Macadamizing Court Street.	City Clerk.
Florida	Jacksonville	Sept. 1	Grading Pearl St. boulevard.	County Commissioner Conroy.
Indiana	Vincennes	Sept. 5, 2 p.m.	Constr. 5,380 ft. gravel roads in Vincennes and Johnson twps.; 1,457 ft. in Busseron twp.; 1,490 ft. in Johnson twp.; 7,962 ft. in Vigo twp.; 4,471 ft. in Busseron twp.	John T. Scott, County Auditor.
Indiana	Greenfield	Sept. 15, 2 p.m.	Improving highway.	Charles H. Troy, County Auditor.
<b>SEWERAGE</b>				
Iowa	Avoca	Aug. 21, 5 p.m.	Constructing 3½ miles of sewer.	Rudolph Stenier, Town Clerk.
South Dakota	Fort Pierre	Aug. 21, 7 p.m.	Constr. 1,000 ft. 15-in., 2,240 ft. 12-in., and 1,680 ft. 8-in. sewer.	M. A. McMillan, City Auditor.
Iowa	Fort Dodge	Aug. 22, 11:30 a.m.	Constr. Webster-Greene-Boone Joint Drain No. 140-772, cost \$29,222.	J. L. Hanrahan, Co. Auditor.
Florida	So. Jacksonville	Aug. 24, 4 p.m.	Constructing sanitary sewerage system.	A. C. Macy, Secy. Bd. Trustees.
Massachusetts	Boston	Aug. 28	Bldg. 940 ft. conduit of reinforced concrete to be 17 x 14 ft. high, horseshoe section, walls 3 ft. thick with brick invert. A house sewer 3 x 4 ft. is to be built in one branch.	L. R. Rourke, Comr. Pub. Wks. City Clerk.
New York	Binghamton	Aug. 30	Constructing storm water sewers.	City Engineer.
New York	Binghamton	Aug. 30	Constructing concrete storm water sewer in First Ward.	
Arkansas	Prescott	Sept. 6, 1:30 p.m.	Excavating 25,500 cu. yds. laying 49,000 lin. ft. sewer pipe and bldg. 120 manholes and a sewer treating plant.	M. W. Greeson, Secy. Bd. Comrs.
Louisiana	New Orleans	Sept. 11, noon	Constr. Napoleon ave. system of drainage canals.	F. S. Shields, Secy. Water Bd.
<b>WATER SUPPLY</b>				
Minnesota	Eveleth	Aug. 18, 8 p.m.	Laying 1,700 ft. 6-in. water mains.	D. P. McIntyre, City Clerk.
New Jersey	Jersey City	Aug. 21, 2 p.m.	Laying about 5,000 lin. ft. 8-in. and 4,000 lin. ft. 12-in. cast iron water pipe.	Bd. St. and Water Comrs.
Pennsylvania	York	Aug. 22, 2 p.m.	Constr. earth dam and appurtenances.	P. A. Small, Pres. York Water Co.
Wisconsin	New Lisbon	Aug. 23, 1:30 p.m.	Constr. water works and electric light plant.	W. S. Sargent, City Clerk.
Florida	So. Jacksonville	Aug. 24, 4 p.m.	Furnishing 5 mi. 8, 6 and 4-in. cast iron pipe and specials; drilling 12-in. well; also furnishing tower and tank; 2 boilers; pumps, generator exciter, etc.	Board Bond Trustees.
Ohio	Cincinnati	Aug. 24, noon	Laying cast iron pipe and special castings and valves and other miscellaneous work.	Director Public Service.
Iowa	W. Liberty	Aug. 25	Constr. a 270,000 gal. reinforced concrete storage reservoir.	Irwin Aikin, Clerk.
Oklahoma	Muskogee	Aug. 29, 10 a.m.	Furnish, and erect, one 6,000,000 gal. low lift centrifugal pump; one 3,000,000 gal. high lift centrifugal pump.	E. H. Fleming, Commissioner.
South Carolina	Honea Path	Sept. 1	Constr. water works and electric light plant, cost \$37,000.	John F. Monroe, Chm. Bd. Pub. Wks.
Texas	Fort Worth	Sept. 5	Constr. dam containing about 300,000 cu. yds. earth work and 60,000 cu. yds. masonry; also 6½ miles pipe line.	Board Engineers, City Hall.
Minnesota	Rush City	Sept. 5, 6 p.m.	Furnishing electric fire pump and motor; for excavating for fire mains; pipe and hydrants for fire mains and laying same.	J. F. Sommers, Village Recorder.
<b>BRIDGES</b>				
Pennsylvania	Morgan	Aug. 18	Constr. concrete bridge; also constr. walls for a bridge over Rocky run.	L. P. Holder, President.
Iowa	Waterloo	Aug. 21, 7:30 p.m.	Constr. reinforced concrete steel arch bridge of 42-ft. span, together with one 5½-ft. pier with foundations, abutments, spandril walls and rails.	City Clerk.
Ohio	Cincinnati	Aug. 25, noon	Constructing concrete bridge on Taylor Creek.	Stanley Struble, Pres. Bd. Comrs.
Canada	Three Rivers	Aug. 25, 4 p.m.	Constr. steel bridge with 2 concrete abutments on river St. Maurice; span 200 ft. length.	L. T. Desaulniers, Secy.-Treas.
South Dakota	Sioux Falls	Sept. 8, 2 p.m.	Constructing concrete bridge.	County Auditor.
<b>LIGHTING AND POWER</b>				
Delaware	Wilmington	Aug. 23	Constructing power house.	Wilmington & Phila. Traction Co.
<b>MISCELLANEOUS</b>				
New Jersey	Linden	Aug. 28	Building Town Hall, cost \$18,500.	Township Committee.

## STREET IMPROVEMENTS

**Anniston, Ala.**—Election will be held in November for voting on \$300,000 good road bonds. Following are improvements suggested: A road from Anniston to Gadsden, or to the Etowah County line, by way of Alexandria; a road from Anniston to Piedmont, via Jacksonville; a road from Piedmont to Oxford, via Choccolocco Valley; a road from Anniston to Talladega, via Coldwater; a road from Anniston to McFall; a road to Sulphur Springs, and a road to Ohatchie from Alexandria.

**Tusculum, Ala.**—City Council has passed ordinance providing for laying cement sidewalks on street approaching Southern depot.

**Gridley, Cal.**—Board of Trade has endorsed proposal to issue bonds for road improvement in Butte County.

**Sacramento, Cal.**—City Trustees have repealed ordinance under which election was called to bond city for \$50,000 for improvement of North Levee from 16th st. to Sacramento River.

**Sacramento, Cal.**—Estimates of cost of improving Magnolia ave. in Oak Park have been submitted to Supervisors as follows: Asphalt macadam, \$28,721; oil macadam,

\$20,662. This is exclusive of curbing and gutters, which will cost \$6,803.

**Yreka, Cal.**—Petition has been presented to Board of Supervisors asking for election for purpose of voting on bond issue for highway purposes.

**Washington, D. C.**—Construction of seven highways is contemplated as follows: From National Capital to Portland, Me.; Buffalo, N. Y.; Seattle, Wash.; San Francisco, San Diego, Cal.; Austin, Tex.; and Miami, Fla. Estimated length, 12,000 miles; cost \$148,000,000.

**Mishawaka, Ind.**—Resolutions have been passed authorizing paving of South Spring st., North Race st. and West Front st., and East and west Third st.

**Des Moines, Ia.**—City Council has authorized curbing of following streets: West 21st st. from north curb line of University ave. to south line of Forest ave., and from north line of Forest ave. to south line of Clark st.

**Leavenworth, Kan.**—Bids will shortly be advertised for paving of Ottawa st. from Fifth st. to Broadway.

**Shreveport, La.**—Construction of system of permanent roads, extending from Shreveport as a hub, in four different directions to parish boundary, is being considered; following routes have been planned: From

Shreveport through Greenwood, westward to Texas line; from Shreveport through Keithville, to De Soto line on south; from Shreveport along Texas and Pacific Railroad track, to Red River Parish line, north, along Texarkana branch of Texas and Pacific Railroad, to Arkansas line.

**Taunton, Mass.**—City Council is considering construction of road on Broadway southerly from Raynham line.

**Bay City, Mich.**—Belinda st. bridge will be paved with creosote blocks.

**Mantua, N. J.**—Road will be constructed between Mantua Grove and Mickleton.

**Roosevelt, N. J.**—Ordinances have been passed providing for curbing and laying of cement sidewalks on 3d and Colwell sts. This will provide continuous sidewalk from Washington ave. to Rahway ave.; also for establishing grades on Washington ave. from Woodbridge ave. to Noe Creek bridge.

## CONTRACTS AWARDED

**Long Beach, Cal.**—For paving Miramar Terminal, Elliott and 16th sts. by Board of Public Works, to Wright & Gaskell and I. L. Fetterman. Both are Long Beach contracting firms. Cost to city will be \$32,000.



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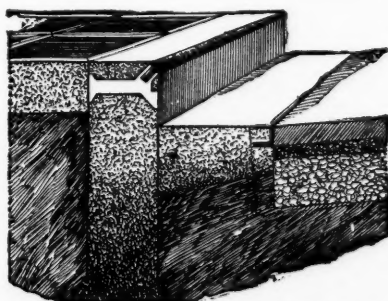
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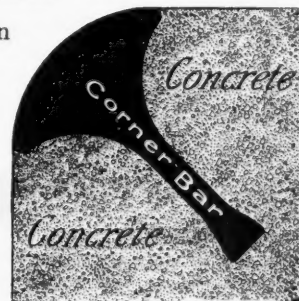
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ARCHITECTS are invited to read pages 242 and 243 "Sweet's Index."

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**Bloomington, Ind.**—To Geo. T. Miller, of Lebanon, to construct 2 miles of macadam with asphalt binder at \$24,994.

**Indianapolis, Ind.**—By Board of Public Works for paving Talbott ave. from 28th to 30th st. to Union Asphalt Construction Co.

**Waterloo, Ia.**—By city for paving on West Mullan ave., Locust st., and Home Park boulevard to Bryant-McLaughlin Co., at \$1.90 per sq. yd., with 60c. for curb and gutter, and 35c. for gutter only.

**Hammond, La.**—By Town Council for construction of 6.2 miles of concrete sidewalks to McReynolds, of Beaumont, Tex., at 99c. per yd.

**Schenectady, N. Y.**—By Board, for repaving Nott Terrace with sheet asphalt, to the Schenectady Contracting Co., at \$2.20 per sq. yd., and \$1.79 per sq. yd. for brick without concrete foundation; paving a portion of Lansing st., to the Union Paving Co., at \$2.20 per sq. yd. for sheet asphalt and \$2.32 per sq. yd. for brick on a concrete foundation; grading Cheltenham ave., to Clarence M. Gridley, at 26 cents per cu. yd. for the earth excavation; grading Golf ave., to Miller Bros., at 60c. per cu. yd. for earth excavation.

**South Fork, Pa.**—By city for grading and paving of portions of Railroad, Grant, Lake, Church and Maple sts., to W. T. Burkett, of South Fork, whose bid was 72c. per sq. yd. Other bids submitted were as follows: M. M. Sheesley & Sons, \$1.60; J. F. Dietz, \$1.22, and C. H. Suppes, Jr., 93c. Grading and paving will cost about \$11,000.

**Waynesburg, Pa.**—By Borough Council for paving sections of West and Church sts. to Richard Ewart.

**Maryville, Tenn.**—By county for construction of 46 miles of pike to Mann Construction Co.

## SEWERAGE

**Los Angeles, Cal.**—Petition has been presented to Board of Supervisors for formation of old Mission storm-water district.

**Sacramento, Cal.**—City is considering new method of sewerage.

**Santa Monica, Cal.**—Election will be held on Sept. 5 for voting on \$27,900 bond issue for laying storm drains into ocean and sewer drains for territory east and north of Marine and 4th sts.

**Hartford, Conn.**—Board of Finance has authorized laying of sewers on Charter Oak ave. and Chadwick ave.; cost, \$1,800.

**Columbia, Miss.**—City is considering improvements to sanitary sewer system.

**New Hartford, N. Y.**—Sewer Commissioners have decided to erect disposal plant of Imhoff system.

**Allentown, Pa.**—Laying of sewers in three sections of city is contemplated.

## CONTRACTS AWARDED

**Alamosa, Colo.**—By city for constructing sewer on 8th st., and also extension sewer, to Marshall Bros., of Las Animas.

**South Norwalk, Conn.**—To Streuli & Puckhafer, Newfield Bldg., Bridgeport, for constructing salt-gazed vitri. pipe sewers in Stuart, Fairfield and Connecticut Aves., South Norwalk.

**Waterloo, Ia.**—By city for construction of sewers on Home Park boulevard, to Black Hawk Construction Co., at 82c. per lin. ft. for 12-in. vitrified Standard pipe.

**Boston, Mass.**—By city for sewerage works in Talbot ave. to Murphy & Doan at \$8,110.99.

**Boston, Mass.**—By city for surface drain and sewer in Watson st., to M. De Sisto & Co., at \$3,057.32.

**Boston, Mass.**—By city for sewerage works in Byron st. to Daniel E. Lynch, at \$2,834.

**Boston, Mass.**—By city for sewerage works in Champney st., to George J. Regan, at \$1,540.87.

**Cohoes, N. Y.**—By Common Council for placing sewer in Simmons ave., to William Conboy.

**Schenectady, N. Y.**—By Board of Public Works for laying sewers on Oakwood ave., 5th ave. and Visscher ave., and catch basin on Hamilton st., to the Kalteux-Frank Co. at various prices.

## WATER SUPPLY

**Pasadena, Cal.**—Water distributing system will be constructed.

**Freeport, Ill.**—Election will be held in October for voting on following questions: Whether water works shall be purchased by city; whether city shall build new plant, or whether new franchise shall be granted to present owners of company.

**Worcester, Mass.**—Appropriation of \$20,000 for sinking wells in Kendall pond, to provide emergency supply of water, is contemplated by City Council.

**Baraga, Minn.**—Election will be held Aug. 21 for voting on \$30,400 bond issue for purpose of installing water and light system.

## LIGHTING AND POWER

**Baraga, Minn.**—Election will be held Aug. 21 for voting on \$30,400 bond issue for purpose of installing light and water system.

**Binghamton, N. Y.**—Board of Contract & Supply has rejected lighting bids and will readvertise.

**Burlington, Vt.**—High pressure pump will be connected with electrical current from municipal lighting plant; cost \$1,500.

## CONTRACTS AWARDED

**Union, N. J.**—By Lighting Commission for installing electric lights in Union Township to Public Service Electric Light Co.

## FIRE EQUIPMENT

**Santa Monica, Cal.**—Election will be held Sept. 5 for voting on \$25,000 bond issue for purchase of two combination chemical hose wagons.

**Hartford, Conn.**—Construction of engine house for fire department is being considered.

**Freeport, Ill.**—Establishment of fire station in East Freeport and purchase of auto fire truck are contemplated.

**Lafayette, La.**—Improvements to fire-alarm system are contemplated.

**Racine, Wis.**—Final plans for rebuilding No. 2 engine house on State st. have been made by Board of Public Works; cost, about \$6,500.

## BRIDGES

**Tampa, Fla.**—Construction of temporary bridge across Hillsborough River during time Lafayette st. bridge is being built is contemplated.

**Tampa, Fla.**—Bids will be received in September by Board of Public Works for construction of Lafayette st. bridge.

**Cranford, N. J.**—Board of Freeholders is contemplating improvements and repairs to two bridges crossing Rahway River.

**Harrisburg, Pa.**—Council is considering substituting concrete for steel girder plate in erection of 13th st. bridge.

**Lexington, S. C.**—County Commissioners will shortly advertise for bids for erection of steel bridge over Saluda River near Amick's ferry.

**Chattanooga, Tenn.**—Construction of reinforced concrete viaduct on McCallie ave. is contemplated.

**Ciudad Juarez, Tex.**—Erection of four new bridges over irrigation canal is contemplated.

## MISCELLANEOUS

**Los Angeles, Cal.**—Plans for improving Everitt Park have been approved by Commission.

**Woodland, Cal.**—Board of Supervisors has authorized District Attorney to call election Oct. 10 for voting on proposition of bonding county for erection of court house and jail.

**Tampa, Fla.**—Council is contemplating erection of hospital.

**Elwood, Ind.**—Council has decided to build new crematory or remodel old one at cost of several thousand dollars. The present garbage plant was erected at cost of \$17,000.

**Fort Wayne, Ind.**—City is considering purchase of auto truck.

**Boston, Mass.**—City Council is considering purchase of health department boat to cost \$48,000.

**Winston, N. C.**—Citizens have voted for issuance of \$250,000 public improvement bonds.

**Monongahela, Pa.**—Citizens have voted to issue \$10,000 bonds to be used for construction of garbage crematory.

**Woonsocket, R. I.**—Resolution has been passed calling for appropriation of \$5,000 for auto truck.

**Spokane, Wash.**—Erection of \$300,000 building to house all departments of government temporarily, and later to be permanent location of police and fire headquarters, is being discussed.

**Tacoma, Wash.**—Department of Public Safety is considering making request for \$10,000 for modernizing police department.

## CONTRACTS AWARDED

**Des Moines, Ia.**—By Council, for sections of Mayor Hanna's flood protection scheme as follows: Callahan Bros., 50-ft. channel, \$8,365; also new channel for Des Moines River, \$14,937; B. S. Hutchins, wing dam complete, \$4,355; Miller-Hay Co., wall from dam to Grand ave., \$7,928; B. S. Boston, Mass.—By city for construction of refrigerating plant for Consumptives' Hospital to Frick Co., of Waynesboro, Pa.

## PROPOSALS

### PENN STREET VIADUCT.

Reading, Berks County, Pennsylvania.

Sealed proposals for building a reinforced concrete viaduct over the Schuylkill River at the foot of Penn Street, Reading, Pa., will be received by the County at the offices of County Controller A. L. Rhoads, Court House, Reading, Pa., until 10 a. m. Thursday, September 14th, 1911, at which time they will be opened in the offices of the County Commissioners.

The structure will be 1350.07 feet long, 80 feet in width, and will be composed of 9-48'-0" Arches, 5-110'0 Arches, and retaining walls.

Bids must be made on the blank proposal contained in the Specifications, which with the plans will be furnished by the County Commissioners upon application to Chas. F. Sanders, County Engineer, Court House, Reading, Pa., and the payment of Two Hundred (\$200.00) Dollars to the County Commissioners, which amount will be refunded upon return of the same.

Bids must be accompanied by a certified check for the sum of Twenty Thousand (\$20,000.00) Dollars payable to A. L. Rhoads, County Controller.

The successful bidder will be required to give a bond in the sum of sixty (60) per cent of the contract price.

The Board of Commissioners reserve the right to reject any or all bids.

By order of the Board of County Commissioners.

A. L. RHOADS,  
County Controller.

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